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Agriculture, Fisheries and Food

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BRITISH COLUMBIA BEEF INDUSTRY REVIEW

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In Association With:

KenAgra Management Services, Ltd.

DISCLAIMER

The British Columbia Ministry of Agriculture, Fisheries and Food commissioned Sparks Companies, Inc. and KenAgra Management Services Ltd. to conduct an independent review of the beef industry in British Columbia. Industry stakeholder groups contributed to the study in the development of the terms of reference and work plan and participated in various review/advisory committees established to provide the necessary information for the consultants to conduct the study.

The responsibility for the British Columbia Beef Industry Review report as written, its findings, conclusions and recommendations reached herein are the authors' alone. The report does not necessarily reflect the opinions of the Provincial Government who funded the study.

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List of Acronyms

ACR	Adjusted Cash Receipts
ADG	Average Daily Gain
AFFCO	Auckland (New Zealand) Farmers Freezing Co-op Company
ALDA	Agricultural Land Development Assistance
ALR	Agricultural Land Reserve
B.C.	British Columbia
BCACF	British Columbia Association of Cattle Feeders
BCCA	British Columbia Cattlemens Association
BCMAFF	British Columbia Ministry of Agriculture, Fisheries and Food
BIC	Beef Information Centre
BIDC	Beef Industry Development Council (committee of BCCA)
CBO	CROW Benefit Offset Program
CCA	Canadian Cattlemens Association
CP	Canada Packers
CUSTA	Canada, U.S. Trade Agreement
CWT	Hundred-weight (100 Pounds)
EEC	European Economic Community

List of Acronyms (Continued)

ERDA	Economic Regional Development Agreements
FACT	Food Animals Concerns Trust
FAGL	Feeder Association Guaranteed Loan
FARM	Farm Animal Reform Movement
FFA	Feed Freight Assistance
FII	Farm Income Insurance
FSAM	Farm Support and Adjustment Measure
FT	Financial Transfers
FTE	Financial Transfer Equivalence
GATT	General Agreement on Tariffs and Trade
GRIP	Gross Revenue Insurance Program
HRI	Hotel, Restaurant, and Institution food service trade
IBP	Iowa Beef Processors
ISTC	Industry Science and Technology Canada
NISA	Net Income Stabilization Account
NTS	National Tripartite Stabilization
PETA	People for the Ethical Treatment of Animals

List of Acronyms (Continued)

PNW	Pacific Northwest
SCI	Sparks Companies, Inc.
S. Int.	Reference of Thompson-Okanagan Valley Region as Southern Interior
U.S.	United States of America
USDA	United States Department of Agriculture
WDO	Western Diversification Office
WGTA	Western Grain Transportation Act
XL	Name of an Alberta Meat Company
$	Canadian Dollars
$US	U.S. Dollars

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I. EXECUTIVE SUMMARY

A. Purpose

The overall objective of this study was to conduct an independent assessment of the B.C. beef industry and outline alternative direction for government and industry, and identify actions to ensure a self-sustaining competitive industry which maximizes economic returns to the province of B.C. Canada.

Specific objectives that Sparks Companies, Inc. (SCI) and KenAgra Management Services, Ltd. consultants pursued were:

- An assessment of the competitive position of the B.C. beef industry, and its various segments--cow-calf, backgrounding, finishing and slaughter/processing--in the context of the North American beef industry;
- An examination of the need for, and impact of, financial support to the various segments of the beef industry including the manner in which the programs are delivered;
- An examination of the level, structure, linkages, and effectiveness of support programs in each segment of the beef industry in B.C. including a comparison to support programs in competing jurisdictions, principally Alberta;
- An assessment of options for future industry development and the implications for government assistance to various industry sectors;
- A review of financial programs to identify changes that may be necessary to achieve objectives of the beef industry.

Also, where identified, changes in industry organizational structure, or industry-governmental relational structure, which will allow for effective and efficient implementation of industry development opportunities, were to have been suggested.

B. Approach

In carrying out this project, a study team of professionals from Sparks Companies, Inc. of Memphis, Tennessee and KenAgra Management Services, Ltd. of Edmonton, Alberta was utilized. The professionals on the team included persons familiar with the technical, government, and policy issues of the beef industry. They brought a World, North American, and Western Canada perspective to the project.

The team initiated work during late July of 1991. The work involved numerous interviews in person and over the phone with representatives of the public and private sectors associated with the industry in the province of B.C., Canada, U.S., and world wide. The team worked to keep an unbiased view during their independent analysis of the facts associated with issues and opportunities facing the B.C. beef industry. The team finished in early 1992 and anticipates it can help industry and government arrive at implementation of a strategy that will build a solid base for the future beef industry of B.C.

In carrying out the study, the team took advantage of previous work done by others--a strategy study (referred to as the MacEachern study) is cited as one of the more significant efforts to develop a strategy for the beef industry of the Province. Most recently the Beef Industry Development Council (BIDC) commissioned a study by Equus Consulting asking them to prepare a profile and situation analysis for the beef industry of B.C. From this and other materials the BIDC (a BCCA committee) prepared a beef industry strategy statement in 1991. BIDC presented its report to BCCA Directors in October, 1991 who received it and referred it to the BCCA Executive Committee for study. Twenty-five of the thirty-five recommendations had action taken prior to the BIDC report and are mainly comprised of existing policy of BCCA, CCA, BIC, and BCFA. Careful and considered thought went into the preparation of these earlier studies and information developed has been reviewed as background for preparation of this report.

In addition to the review of secondary materials the study team undertook several activities that would help provide direction for the industry. B.C.'s beef industry was reviewed in context of the North American beef industry because it is an extension of that industry. Each segment--cow-calf, backgrounding, finishing and slaughter/processing--of the B.C. industry was analyzed as to its competitiveness with its major competing regions--Alberta, and the Pacific Northwest U.S. as well as selected regions within B.C. A description of the B.C. regions analyzed are as described below and geographical locations are set out on Figure I-1.

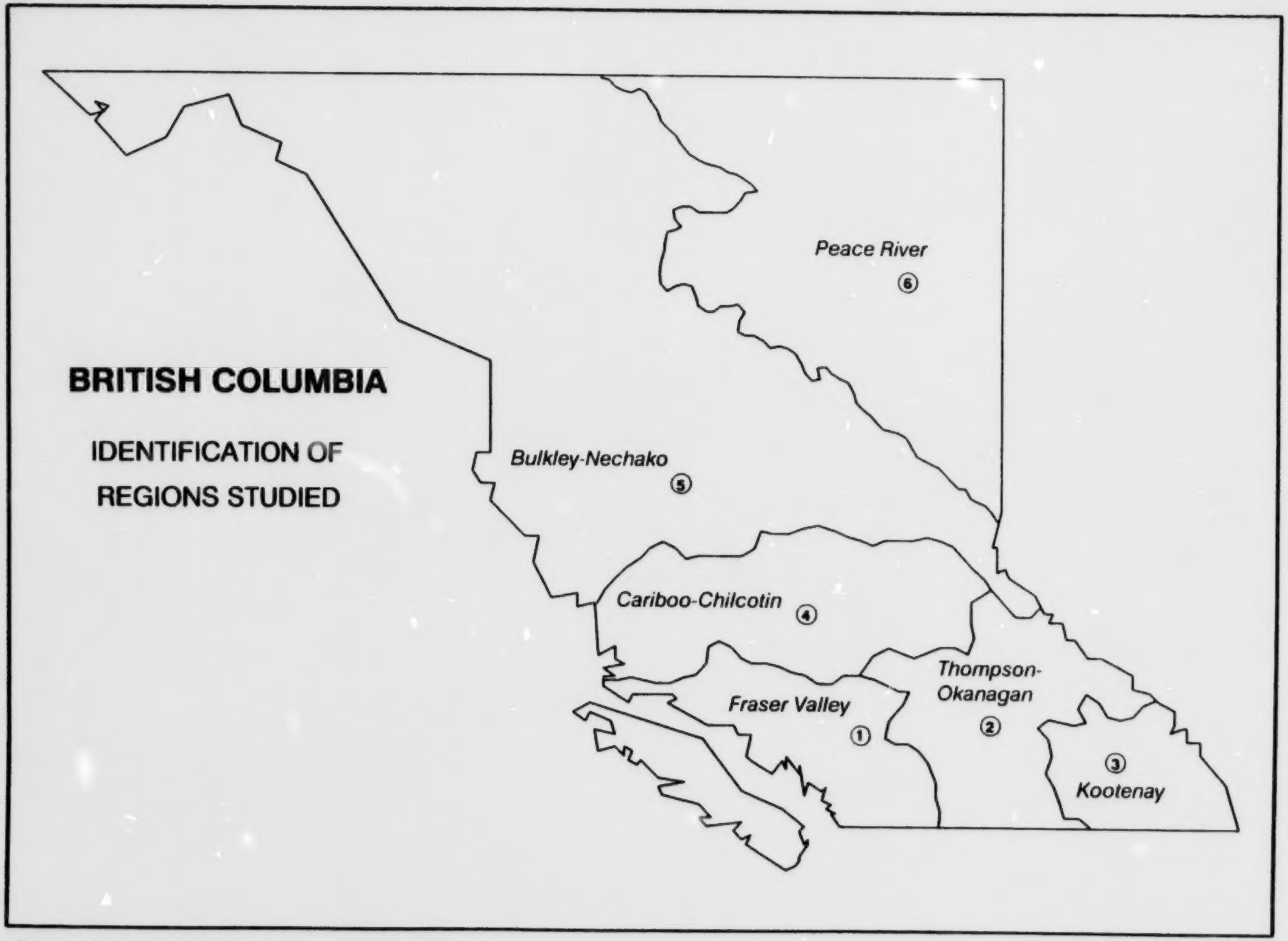
Definition of Regions in B.C.

Based on discussion with leaders of the B.C. beef industry, British Columbia was partitioned into six study regions for examination as to competitiveness in the industry. They were: 1) Fraser Valley, 2) Thompson-Okanagan Valleys, 3) Kootenay, 4) Cariboo-Chilcotin, 5) Bulkley-Nechako, and 6) Peace River. A brief definition of these areas identifies the location and characteristics of the region.

1) Fraser Valley

This region extends from the city of Vancouver in the west to Hope on the east. This region contains the most populated area of the province. The climate is moderate year-round, with snow generally only at higher altitudes. It is extremely lush and green with vegetation, and frequently experiences heavy winter rains.

Figure I-1


BRITISH COLUMBIA
IDENTIFICATION OF REGIONS STUDIED
Peace River
⑥
Bulkley-Nechako
⑤
Cariboo-Chilcotin
④
Fraser Valley
①
Thompson-Okanagan
②
③
Kootenay

Source: Based on Census Divisions of British Columbia.

2) Thompson-Okanagan Valleys

This region contains the oldest cattle ranches in the province. The region includes the Thompson-Nicola and Okanagan-Similkameen Valleys. The Thompson-Nicola climate is hot and dry in the summer and cold, but not extremely wet, in the winter. The Okanagan Valley is dominated by the lake from which it draws its name (or vice versa). The area is known for its hot, dry, almost desert like summers and moderately cold winters. The area produces fruits and vegetables and is renowned for its recreational features.

3) Kootenay

The Kootenay region stretches from the Okanagan Highland range on its west, east to the Alberta border, the U.S. border to the south and Golden to the north. This region has more wooded area than does the Okanagan region, but in other respects is similar.

4) Cariboo-Chilcotin

The Cariboo-Chilcotin region lies north of the Fraser Valley and Thompson-Okanagan regions. It is bordered by the Columbia Mountains to the east and the Pacific Ocean to the west; Clinton to the south and Quesnel to the north. Summer weather tends to be warm and very dry; winter is snowy. The central portion of the region is fairly flat.

5) Bulkley-Nechako

This region is predominantly mountains and forest. The primary area for cattle and commerce is along Highway 16 from Prince George to Smithers. This area has mild summers and cold winters.

6) Peace River

Geographically and climatologically, this area is an extension of the Peace River area of Alberta. It has warm summers and cold winters.

Also, the team determined what were the key driving forces, that affect the dynamics of the beef industry in North America and particularly B.C., and examined each for potential impact on the B.C. industry. Finally, the government support programs that underpin the industry were examined to determine if they helped or hindered the maintenance of a competitive industry with a level playing field.

Even though the study team used secondary information and input from industry and government participants, the final recommendations of the project reflected Sparks Companies, Inc.'s and KenAgra Management Services, Ltd.'s professional staffs judgement in regard to key elements for this project.

C. Findings and Conclusions–Competitiveness

The findings and conclusions of this B.C. beef industry project (around which alternative direction, for government and industry, can be developed to ensure a self-sustaining competitive industry which maximizes economic returns to the province of B.C.) are summarized as follows:

1. *North American Context–Industry Structure & Organization*

- B.C., particularly with a U.S./Canada Free Trade Agreement, is an integral part of the North American beef industry. As such B.C., to survive in this competitive beef industry, will have to build from its natural comparative economic advantages.

- The North American beef industry is dynamic and its structure has and is changing toward the following:
    - The slaughter/processing segment has consolidated and large efficient plants are the norm of key competitors.
    - Slaughter/processing operations have located in close proximity to major feedlots to be close to its key raw material (finished cattle).
    - Slaughter/processing operations ship most meat as boxed beef; better meeting the end users need; and eliminating the shipment of bulky carcasses and air.
    - Feeding and finishing operations have consolidated and large scale feedlots (30,000 plus head per cycle) are the dominant suppliers of finished cattle to packers.
    - Large feedlots locate in areas where environmental problems are minimized; feed costs are lowest; and transportation of live animals to packing plants is minimized. They tend to concentrate in the Texas high-plains; the feed grain plentiful regions of Iowa, Kansas and Nebraska; the potato-fruit waste surplus region of the PNW; and, the southern regions of Alberta within access to surplus grains.
    - Backgrounding calves tend to be in areas where reasonably priced grass or roughages are available, and within a 12 to 24 hour haul of a finishing feedlot.

  - Cow-calf operations tend to be farthest removed from the finishing feedlot and the slaughter/processor. Operators utilize low cost pasture land for the cows, and calves are moved in a migratory manner toward the finishing centers after weaning.

- In context of the North American industry B.C., is at the fringe of the evolving industry structure with; a comparative advantage in low cost range and grass; a solid tradition in cow-calf production and backgrounding; a long haul distance from the key feeding and slaughter/processing centers; a dependence on high cost feed grains for feeding and finishing.

2. *Consolidation*

- The slaughter/processing segment in North America has consolidated significantly in recent years. Most mergers and acquisitions already have occurred among the largest players in the slaughter/packing sector.

- Consolidation to fewer Canadian slaughter/ packing plants has been dramatic since 1989 when Cargill entered the industry with new approaches to slaughter/packing. The leading slaughter-packers have gone from operating 18 plants in 1980 to operating 4 plants in 1991. The leaders are now Cargill and Lakeside--and two smaller groups--XL Beef (also in Alberta, at Calgary), and Better Beef Ltd. in Guelph, Ontario; and, a few small niche players.

- B.C. has been impacted by the consolidation movement. Beef slaughter/processing in the province is down to one niche packer (J&L Beef) and a few country specialty plants.

- Consolidation is expected to continue in the North American Industry, but very modestly, as existing slaughter/processors adopt new technology, improve plants and increase efficiency through double-shifting or other similar efforts.

- Excess capacity exists in the slaughter/processing segment; therefore, before much more consolidation through acquisition occurs, pressure will exist to utilize this capacity.

- Further consolidation can occur in the finishing segment, and is likely to occur as the remaining packers struggle to establish ways to obtain a stable supply of finished cattle.

- Consolidation in backgrounding will follow closely what happens in the finishing segment. There is room for further consolidation of ownership.

- Cow-calf operations will continue to consolidate, but the number of operators in this segment will continue to be large and no single player will dominate or wield market power.

3. *Integration*

- As large slaughter/processing operations with excess capacity (about 25 to 35 percent) compete for a limited supply of finished cattle they may take control (through ownership or contracting) of more of their own finishing operations thus integrating some feeding activity together with slaughter/processing.

- It is believed that integration or alignment of production in the beef industry will come from contractual arrangements and coordination of production rather than by ownership. Capital requirements will make poultry-like integration by ownership unlikely. The study team does not believe that calving to carcass integration as a major force is at all likely in the foreseeable future.

- Packers are seeking animals that cut out more consistently. Integrated or coordinated production systems are more responsive to changes in consumer and packer preferences, and they help improve product quality and reduce costs of marketing, transportation, procurement and risk.

4. *Markets and Marketing*

a) *Beef*

- The study team finds that beef consumption has reached a bottom and will be stable or slightly rising between now and 1996. This provides a solid basis for industry planning.

- Total meat consumption in the U.S. in the four major meats (beef, pork, lamb, and poultry) has risen steadily to an annual per capita consumption of about 207 lbs. (94 kg) on a retail weight basis. Comparable Canadian annual per capita consumption is about 178 lbs. (81 kg).

- Poultry's growth, beef's decline and pork's stagnating consumption in recent years represent the dynamics of a changing meat industry market place and a shift in consumer eating habits. Our supply/demand work at Sparks supports this trend, but foresees a leveling off in beef's decline, providing that economic recession does not extend beyond 1992.

- Health concerns, taste, and price are the highest ranked factors that determine the consumption of beef. However, due to industry efforts to produce lean beef, taste and price seem to be regaining their influence as the principal factors affecting the consumption of beef.

- Surplus Canadian meat production, as in the U.S., has traditionally moved East and West from the "prairie/midwest" regions. This pattern has been broken as a result of changes in rail rate charges and implementation of the Free Trade Agreement between the U.S. and Canada. Recently, more cattle and meat have moved south into the U.S. from Western Canada, and meat from the central U.S. has moved north into Eastern Canada.

- Poultry is expected to continue to gain market share in the U.S., but beef is expected to have reached bottom. In the U.S. by 1996, broiler consumption is projected to rise to about 78 lbs. (35 kg) per capita, and beef to 72 lbs. (33 kg) per capita. The poultry supply management program of Canada has affected what would be a similar trend.

- As the U.S./Canada Free Trade Agreement, GATT and other international trade and price relationships change, the Canadian poultry supply management program may come under pressure to be reformulated. If so, it could encourage more chicken to be eaten in Canada.

  Sparks Companies, Inc. analyzed the impacts of such a change on meat consumption and their analysts expect the consumption of chicken would rise (from 51 to 66 lbs. per capita (23 to 30 kg)) much faster than the consumption of beef (from 51 to 57 lbs. per capita (23 to 26 kg)) and result in Canadian meat consumption patterns very similar to those in the U.S.

b) *Feeder Cattle*

- The study team has observed that packers are beginning to demand cattle which are leaner and have a more consistent cut out. It could result in obtaining a premium price for these cattle or more price discounts for undesirable cattle.

- The predominant method for marketing feeder calves in the U.S., Canada and B.C. is through auction markets where a commission is charged for the selling services provided. However, some cattle are sold privately to feedyards or other buyers. Also, some cattle are retained by the cow-calf operator through backgrounding, and finishing.

- The auction system is time honoured, and as a price discovery system, appears to work well in most instances. At least producers report that it results in the best possible price for their cattle. However, two deficiencies appear to exist and include:

- animals are subjected to unnecessary stress as well as bruising.

- payments are made primarily on the basis of age and weight, but packers are moving toward wanting an animal that will have more predictable finish and cutability. While B.C. cattle, in terms size, confirmation and excess fat, have not been a problem, means need to be investigated for ensuring practices and measurements are in place that will continue to send proper price signals to producers encouraging them to produce cattle with characteristics sought by packers.

- In principal an education program for cow-calf producers is desirable to ensure practices continue to result in cattle of proper characteristic.

c) ***Backgrounder***

- The market for backgrounded cattle should be stable or rise slightly for the foreseeable future.

- Cattle backgrounded in "drylot" feeding operations are generally sold direct to the finishing yard. They seldom go through an auction yard. However, yearlings backgrounded on grass are sold through auction yards in B.C.

- Prices of backgrounded cattle off "drylot" operations are generally determined via negotiation between backgrounder and finisher and on the basis of information provided by services such as CANFAX. It seems to be a satisfactory system.

- Measures should be taken to ensure good communications continue between packer and backgrounder to produce cattle most closely to what packers want and are willing to pay a premium for. An education system as described for cow-calf producers could be considered.

d) *Finished Cattle*

- As with calves and backgrounded cattle, the market for finished cattle should also be stable or rise slightly in the foreseeable future.
- Price for finished cattle is generally negotiated and very seldom established by auction.
- Finished cattle are generally priced by slaughterers on a grade and yield basis and not age and weight alone. Measures to ensure this continues should be sought and means determined for ensuring the message is getting back to the calf and backgrounder level.

5. *B.C. Beef Industry Competitiveness*

Within the B.C. beef sector, the study team found indicators of strength. First, key individuals are every bit as well informed and involved in most of the various markets or new technologies as cattlemen anywhere else. Size plays a role -- B.C. does not have very large feedlots so it misses economies of size advantages. Yet B.C. cow-calf operations are somewhat larger than in Alberta and the backgrounding sector seems about the same size mix. The widespread use of cross breeding in some areas provides a good annual crop of faster growing sought after calves.

Across the various regions of B.C., cattle operations are very diverse and have a wide range of costs. Even within one valley, changes in elevation can cause wide ranges in the technical ratios for outputs versus inputs -- technical inefficiencies are often caused by geography, so management must be innovative. Cattle management must be very good in B.C. for these operations to survive and grow on a full time basis. Some of these B.C. managers have recent roots while others have longstanding successful family commitments to achieving better livestock production.

Yet considerable evidence was found indicating that the ranch "lifestyle" meant a lot to people along the many valleys of B.C. -- especially part time operations of under about 200 cows. Despite this value for lifestyle and beautiful mountains that the world would pay a fortune to enjoy, the consulting team found few ventures intermingling beef production with the tourist sector. One past BCCA president noted that for several years he was encouraged to build cabins and offer "trail rides to mountain sheep" but had taken no action. Another imaginative rancher used "weekend cowboys" to help move cattle for very little cost (merely the cost of grass for their horses during the week and the weekend food to feed the crew of friends). More value adding or cost reduction associated with tourism could be developed. For some, tourism on the ranch could add more value than traditional backgrounding.

High paying off-ranch work is sometimes in conflict with timely haying of quality forage. Forage quality and costs per nutrient can be improved considerably even by the busy person through the use of silaging with technologies like round bale silage bags. Getting reliable quality through silage is especially critical for those wanting to add value through backgrounding.

In years of ample forage some producers blindly go into backgrounding without a thorough break-even analysis. For example, backgrounding in 1991: in many cases producers would have been further ahead to have put extra forage in reserve for future drought years and moved the cattle out.

Some old rigidities were found in Crown Land grazing tenures that add to forage land costs for the cattleman. While recognizing that at the time of implementation they were to provide stability to the industry, over the long term they have reduced the competitiveness of some regions.

Furthermore, there is evidence that added backgrounding within B.C. could be most competitively pursued by not helping calves move south toward the warmer, densely populated areas each fall, but north toward the lower cost, high quality forage. This finding is counter to the significant business and government focus towards the lower mainland of B.C.

Study team findings indicate, that as elsewhere, to be successful in the production of beef cattle in the Pacific Northwest, including B.C., it is essential to have:

- Available low cost good quality feed (pasture, harvested forage, grains, and or other acceptable nutrient sources) for summer and winter carrying of the animals;
- Properly selected beef cattle with the genetic characteristics required to permit efficient gain, under range and confinement feeding conditions, of the proper meat type cattle;
- Water in ample supply and reasonably priced for drinking while cattle are on range and in confinement. Irrigation water to support crop production is essential in some regions;

- Management talent that is dedicated and understands the requirements of caring for cattle; the price relationships between cow-calf, backgrounding, and finishing; and managing a business;
- Skills in determining the best time to market cattle to realize maximum returns and protect risk from market fluctuations; using futures and options if necessary;
- Close proximity to the ultimate market outlet for the cattle whether it be an auction yard, a finishing feedlot, or the slaughter facility. This is because transportation is critical to weight loss of the animal during shipment as well as to the cost of getting the animal to market.

By far the most important determinant is ensuring the availability of good quality low cost feed as it accounts for the largest single cost other than the price of the cattle themselves.

Specific findings with respect to each sector -- cow-calf, backgrounding, finishing, and slaughter/processing -- of the business are summarized in this section below.

a) *Cow-calf*

Study team findings indicate that in each region--B.C., Alberta, and PNW technical conditions exist to support successful cow-calf production operations. In all regions proper cattle can be acquired; proper management and marketing skills can be obtained; and, transportation to market and water to support production are not generally barriers. The single most important factor that differentiates regions is feed availability and cost.

With respect to feed, findings suggest that Alberta is a very competitive region overall, because feed, pasture, forage and grains are available at reasonable cost. Examination of B.C. regions indicate that the northern regions support the best forage production and availability of other feeds. Among Alberta, PNW and B.C., these northern regions, (particularly the Peace) can offer good opportunity comparatively to expand cow-calf production.

Alberta is the most cost competitive region for cow-calf production. The next most cost competitive region is the Peace with costs at $43 more per head than in Alberta. The primary reason for this advantage is the fact that Alberta producers can generally spread their fixed costs for equipment over both a grain operation and a cow-calf operation. Obviously, this is a generalization that an individual producer may not be subject to, so a producer in any one of the regions studied could equal or better the costs of the average Alberta producer, but the exceptions are not those for which general policy is made.

b) *Backgrounding*

Study team findings indicate that in each region--B.C., Alberta, and PNW technical conditions exist to support successful backgrounding operations. In all regions proper cattle can be raised; proper management and marketing skills can be obtained; and, transportation to market and water to support production are not generally barriers. The single most important factor, as in the case of cow-calf enterprises, that differentiates regions is feed availability and cost.

Backgrounding was found to be carried out under two distinct regimes--"grassers" and "drylot". The choice of method is dependent on the individual producers own situation with respect to forage availability. In general; therefore, the study team would conclude based on its technical and financial analysis that the regions which are most suitable for cow-calf production--northern B.C., particularly the Peace, and Alberta--are the regions most suitable for "grasser" backgrounding because good grazing is needed.

On the other hand "drylot" backgrounding is most appropriate in lots where local forage and grain are available and in good proximity to on-transfer cattle to finishing yards near to slaughterers. This again suggests the Peace and northern-central Alberta.

Since it is difficult to be definitive with respect to choosing regions on technical grounds, the cost comparisons for the "grasser" and "drylot" operations among regions set forth a general conclusion about which regions offer the best opportunity.

Results of the "Drylot", "Grasser" and Combination backgrounding analysis are set out in the table below:

Profit Differentials between regions for "Drylot", "Grasser", and Combination "Drylot/Grasser" Backgrounding, Alberta as Base, 1991

Region	Drylot $/head*	Grasser $/head*	Combination $/head**
Alberta	00.00	00.00	00.00
Fraser Valley	(60.05)	(35.61)	(77.42)
Thompson-Okanagan	(42.37)	(3.56)	(63.82)
Kootenay	(36.92)	(7.62)	(79.59)
Cariboo-Chilcotin	(12.21)	4.06	(48.86)
Bulkley-Nechako	(7.66)	00.00	(9.64)
Peace River	5.62	16.25	8.28
PNW	(35.89)	(10.25)	(5.16)

* Backgrounded calves are fed from 500 to 800 lbs.

** Combination fed background calves are fed from 500 to 900 lbs.

- With the exception of the Peace all B.C. regions are at a disadvantage to Alberta for "drylot" backgrounding. Fraser Valley is least competitive.

- The most competitive regions for "drylot" backgrounding in B.C., other than the Peace, are Cariboo-Chilcotin and Bulkley-Nechako.

- The disadvantage shown for the PNW is exaggerated by the fact that feed of local derivation is not being accounted for. Rather, the higher priced barley is used in profit comparisons.

- The Peace, of all regions studied, is most competitive in "grasser" backgrounding. Alberta, Cariboo and Bulkley are all nearly equal in terms of profits, and only slightly higher than the Peace. Fraser Valley is least competitive.

- The disadvantage shown for the PNW, Kootenays, and the Thompson-Okanagan is because forage is higher cost in these regions due to use of high cost irrigation water.

- The Peace is the most competitive region for combination backgrounding, and Bulkley, Alberta and the PNW follow closely. Fraser Valley continues as the least competitive.

- Again the driving factor is the differential feed costs between regions.

The results also suggest that it is dangerous to generalize because circumstances can exist in each region that support backgrounding. However, when deciding on government policy support for backgrounding, the choice of policy should relate to the broad based conclusion and not the special circumstance.

c) *Finishing*

Study team findings indicate that in each region--B.C., Alberta, and PNW technical conditions exist to support finishing operations. In all regions proper cattle can be acquired; proper management and marketing skills can be obtained; and, transportation to market and water to support production are not generally barriers for the size operations that exist. The most important factors that differentiate regions as supporters of finishing include feed availability and cost; and scale opportunity for feedlots.

With respect to feed, findings suggest that Alberta is a very competitive region overall, because grain for feeding is readily available. Also, potato and fruit wastes in the PNW provide that region with a very competitive feed source. B.C. does not have equivalent feed supplies to support major feedlot expansion. And, the way the North American beef industry is developing, to succeed as a finisher many industry participants and analysts think it will be necessary to finish in excess of 30,000 head per cycle and run up to four cycles per year. This is being driven by the slaughter/packer that today demands in excess of one million finished cattle in a radius of 200 miles (320 km) before a slaughter plant will be constructed. Small feedlots will continue to serve niche slaughterers.

Changes in technology and production efficiencies have changed the advantages of the traditional finishing areas. Advances in transportation and modernization in infrastructure have made the location of the calves and feed the most important elements in the profitability of finishing cattle, rather than where the consumer is located.

Consequently, feed limitations and scale economies do not permit expanded finishing operations in B.C. at this time.

In addition to the technical factors that tend to disfavour B.C. cattle finishing the cost comparisons prepared also tend to disfavour B.C. as a finishing region. The result of the cost analysis is presented below:

Profit Differentials between regions for finishing cattle, Alberta as Base, 1991

Region	Finishing $/head
Alberta	00.00
Fraser Valley	(28.54)
Thompson-Okanagan	(41.35)
Kootenay	(36.30)
Cariboo-Chilcotin	(25.32)
Bulkley-Nechako	(21.09)
Peace River	(30.21)
PNW	17.11

The cost analysis indicated that Alberta and the PNW were the least costly and most profitable regions in which to finish cattle. The PNW was $17 per head more profitable than finishing in Alberta. The primary advantage in the PNW were low cost potato waste and low cost freight to the slaughter facility. The only reason Fraser Valley is positive to some other regions of B.C. is the short haul to the local slaughter plants, because production costs were found to be higher.

d) *Slaughter/Processing*

Conclusions as regards consolidation and integration in the slaughter/processing sector were set out above and are not repeated here. The key findings associated with technical and cost matters in the slaughter processing sector are:

- Competitiveness in the slaughter/processing sector is linked to the ability of a particular firm to innovate and up-grade. Technological innovation has been a creeping innovation and the key features have been; large plants; changing methods, as for example through use of futures and options to manage risk; machinery improvements that have reduced labour requirements; and, carcass breaking in the plant (lowest cost place to do it) rather than at the supermarket to facilitate shipment of boxed beef and reduce costs.

- Interviews with beef slaughter/processing managers and "meat facts" publication by the American Meat Institute indicate that costs in U.S. Plants are lower than in Canadian plants. The cost to kill cattle in Canada is estimated to be about $5 to $15 per head higher than in the U.S. depending on the plant. Further, the cost to box beef is about $10 to $20 higher per head than in the U.S.

- The primary reason that costs are lower in the U.S. include:

  - Scale economies common in U.S. plants permit slaughter costs to be lower by as much as $US10 to $US12 per head. This is what happens when you go from 50 to 75 head per hour (common in Canada) to 350 head per hour (common in the U.S.). This assumes the plants are operated at capacity during an eight hour shift.

  - Direct labour costs are about the only meaningful comparable costs for slaughter/processors operating in the industries of Canada and the U.S. U.S. wage rates are about $US7 to $US10 per hour whereas Canadian wages are quoted at $15.30/ hour.

  - Canadian interest rates and distribution costs are both higher than in the U.S.

- Gross profit margins are generally razor thin for slaughterers, due to intense daily market competition in procuring animals; therefore, local smaller slaughterers must serve a niche market or operate out of depreciated facilities that permit survival even in the face of intense competition.

- The principal need of the Canadian and B.C. packing sector is not to build more packing plant capacity, but rather to focus on:

  - Going all out to achieve grading compatibility (or standardization) with U.S. beef, so that Canadian beef has full access to the U.S. market (instead of just vice versa)

  - Combining with the U.S. to pursue a relentless objective of producing consistent beef that will appeal more to ultimate consumers and thus stimulate demand. This is the major challenge facing the industries of both countries, and merits a joint effort to maximize effective use of all check-off dollars collected for promotion purposes.

- The study team found that some B.C. slaughter/processors could be competitive because they operate older, nearly fully depreciated facilities. Yet, the team heard concerns from interior finishers regarding fairness on yield. However, according to Agriculture Canada statistics comparing the average rail grade price for Fraser Valley and Alberta during 1989 and 1990; Fraser Valley averaged $1 and $2/cwt respectively higher than Alberta. Interior finishers also expressed frustration with having to sell to B.C. slaughterers during the 1988 slaughter program. Packer interests denied concerns related to yield. Fraser Valley finishers expressed satisfaction with packers with whom they deal. Rather than implementing government programs to encourage finishers to sell to B.C. slaughters, it may be more important to encourage slaughterers to embark on a number of aggressive courses of action:

  - Establish a program of forward contracts for finished cattle.

  - Actively build relationships with finishers across B.C., proving yields and prices can be comparable to Alberta or PNW.

  - Facilitate contracts between backgrounders and finishers to ensure calves remain in B.C.

- Become active in northern B.C. areas where backgrounding is well suited.
- Focus on niche market opportunities including value added fresh beef products such as already is done by some slaughterers.

6. *Grading/Inspection Between U.S. and Canada*

Grading systems between Canada and the U.S. are not equivalent and there is a need to correct this because:

- While absence of grading equivalence is not inhibiting sales of U.S. beef in Canada, it is inhibiting efforts to market Canadian table beef in the U.S., especially in supermarkets.
- The present grading system results in surplus western Canadian table beef production having to find outlets in eastern Canada, because the large west coast market of the U.S. is closed to Canada. This tends to depress the prices of table beef in eastern Canada, against an increasing inflow of U.S. table beef.
- The present grading tends to encourage cattlemen to seek sales of live cattle to the U.S. feedlots or slaughter/processors to avoid grading problems.
- Planned changes in Canada's beef grading (including A-A and A-A-A symbols for marbling) will need trade education and promotion to make beef salable in the U.S.

7. *Societal Factors*

- Environmental issues are an increasing concern and B.C. producers need to be aware that regulation related to the environment will only become more stringent and affect industry decision making.

- Animal rights was a concern expressed by B.C. producers, but no real problems have been encountered. Pro-active moves are being taken to mitigate against potential problems.

- Land (ALR, Crown Land) is used by beef producers, but in recent years Crown Land is being sought by other users. These other users include: recreation, tourism, mining, conservation, wildlife, timber farming, to name the more important. Thus, beef cattle producers must continue to co-exist with these groups. Combining tourism with ranch operations might help the ranch cause.

  Presently, the ALR regulations are not likely to change thus discouraging movement of finishers from the Fraser Valley, but environment problems will eventually make movement desirable.

D. Findings and Conclusions–Financial Programs

1. *Government Influence on Competitiveness*

Contrary to Porter's classic competitiveness research, the study team finds that provincial and federal policies are a major element of the competitiveness of Canadian beef systems in Alberta and B.C. For example, the 1970's saw a retention of B.C.'s cow numbers due to FII when all other areas shrank. The 1980's saw Alberta increase its aid to offset the federal Crow distortion, to create interest rate stability, and to subsidize packing plant consolidation within Alberta. Consequently, feeding numbers grew in the 1980's, partly due to increased U.S. demand.

In future, the study team believes provincial deficits, international trade policies and especially the Canadian - U.S. Trade Agreement will temper funding by the Canadian governments. Canada's governments are tending toward more neutral supports like NISA. In addition, rather than "going it alone" in one province, joint federal-provincial mechanisms like NTS, GRIP, and NISA will be factors in the 1990's. Rather than guiding government to give more, the beef sector leader of the 1990's is more likely to be guiding government where to cut first (to deal with deficits, GATT and possible U.S. countervail).

It follows that the BCMAFF and the B.C. Beef sector associations need to be alert to governments' role continentally and to proactively maintain a competitive position. There is evidence that during the last half of the 1980's, turmoil within BCMAFF and within the industry did little to generate a signal of long term beef sector confidence -- attention was almost exclusively on the role of government subsidies during a time of rising livestock prices across the continent. In 1991, despite some clarity from the BIDC strategy and inciteful discussions in the subsidy advisory committee, the study team found some B.C. beef industry participants still preoccupied with revenues from government rather than from the marketplace or from innovation and more focus on actions that help improve competitiveness.

The study team found excessive industry focus on how "unlevel" the playing field was -- most B.C. beef sector people sincerely believe "some other government (in Alberta, Ottawa, or in the U.S.) is doing more for their beef sector than is the B.C. government". Yet after examining the net benefit calculations done by independent nationally respected experts, it was found that the "field" was "level" (see Table below). In fact, the little publicized net benefit calculations have for several years shown B.C. marginally better served by governments than Alberta.

Comparison of Net Benefit Summary

NET BENEFITS YEAR	Alberta ($/$100ACR)	British Columbia ($/$100ACR)	B.C. Advantage ($/$100ACR)
1990	5.58	5.74	.16
1989	6.20	6.45	.25

Depending on how the efficiency of Crow and other subsidies are handled, more sophisticated research might find B.C. with less effective government help in aggregate, but that is left to another study which is less vital than other competitiveness issues. Within these terms of reference only minor discrepancies with net benefit calculations were found and judged to reflect the fact that B.C. beef production had at least a level playing field with Alberta in 1989 and 1990.

Furthermore, when the study team looked exclusively at backgrounding and finishing, the B.C. subsidies per head were equal to or higher than in Alberta due to the combination of FII and FFA and despite Crow Benefit offset (CBO).

Since FII levels are more uncertain to the B.C. industry than competitive Alberta subsidies like CBO, both backgrounders and finishers in B.C. could be at a disadvantage per dollar of government aid. The study shows more than a level B.C. playing field in government dollars, but the study team believes these dollars could be better spent.

- "Bottom loaded" input aid or "front end" output-related assistance, that is known when a calf or feeder is bought, would better compete on a Canadian basis. Yet some may argue FII is more "green" under future scenarios "B" (a GATT deal) or "C" (a countervail action). The study team disagrees and expects FII or any per animal assistance would be treated equally. Current FII payments for backgrounding and finishing should be redirected to a /cwt of gain or per head payment announced in advance annually or quarterly.

- Allocations of FII money between finishing and backgrounding are arbitrary, based somewhat on history and complicated by NTS. The study research shows backgrounding only gets about 28% ($6.54/head) as much aid for the first 300 lbs. (136 kg) (500 to 800 lbs. (227 to 363 kg)) as finishing aid ($23.76) for the last 300 lbs. (136 kg) 800-1100 lbs. (363 to 499 kg)). This difference seems excessive and ways to correct it should be sought.

2. *The Reality: Uncompetitiveness Despite More Than Competitive Government*

In spite of the financial support programs provided by the B.C. government that level the playing field some inherent competitive disadvantages exist. Earlier an absolute advantage of the Peace and Bulkley areas for beef production was noted. However, the study team believes most other regions have an absolute disadvantage compared to Alberta in beef production, but a comparative advantage in cow-calf production (except the Fraser Valley). This reality flows from cost comparisons, population pressures, and a host of other variables including the presence of competitive packer demand (price and yield). This conclusion is not distorted unduly by any government or government policy. The long term trend is that the more aggressive packers and feedlots in Alberta plus the northern B.C. forage advantage will increasingly draw fall calves.

Certain B.C. niche locations in regions other than the Peace or Bulkley will do backgrounding and limited finishing on a continued basis because they have uniquely lower costs in the short run or very superior management. The presence of "sunk" facility investment will be very helpful until environmental pressures or obsolescence requires re-capitalization. Some operators in the interior can also take advantage of ample truck capacity and reasonable rates to three markets to lever up their returns from the marketplace. They can regularly create competition between Cargill and Lakeside in Alberta, IBP in Pasco, in the PNW, and J & L Beef in Vancouver without any government help.

The Fraser Valley feeders are not cost competitive, are virtually captive to one packer and cannot provide adequate, continuous volumes to J & L Beef. In the long run, Fraser Valley feedlot operators should consider resettlement to northern B.C. (or the competitive niches in the interior). To facilitate this transition, the B.C. government may wish to revise the Agricultural Land Development Assistance Act or bring in new legislation that would encourage the transition.

3. *Strengths to Withstand the Risks of the 1990s*

Compared to Alberta, B.C. is well positioned to withstand and even gain relatively during the 1990's in parts of the beef industry. First, with interest rates dropping and grain prices likely to rise, the B.C. strength in forage can lead to very competitive summer backgrounding. Secondly, any changes to the Crow rates will have $10 per tonne more benefit to B.C. than Alberta. B.C. is also more highly enrolled in NTS than Alberta at least at the cow-calf level. Hence, the cow-calf base should be able to weather a downturn, perhaps as well as the 1970's. Finally, with the BCCA's BIDC process and this report, the industry is close to finalizing a vision and can now focus on these strengths.

This growth can only develop if the inherently uncompetitive but often traditional activities identified by the study team are avoided in most cases. A major drive by "clusters" of innovative cow-calf ranchers, order buyers, auction markets, backgrounders, and finishers is essential. The team identified education and the need for several consultants or advisors to help link proactive entrepreneurs willing to change. Such a cluster appears to be forming near Vanderhoof; others may exist but did not come to the team's attention.

E. Strategy and Recommendations:

The extensive review of the B.C. beef industry by the study team has lead to several findings and conclusions; with respect to the B.C. beef industry's position in the North American industry; the competitiveness of the various sectors in that industry; and, the levelness of the playing field as compared to major Pacific Northwest competitors, particularly Alberta. The findings and conclusions lead the team to a strategy recommendation and several ancillary recommendations that will help, if put into action plans and implemented, B.C. beef industry participants realize a solid expansion in the future.

1. *Strategy:*

The strategy recommended is to focus the resources of the industry and government of B.C. on building the strongest cow-calf and backgrounding sector in western North America. This primary strategy is recommended because:

- It builds on the natural advantages of the B.C. range and forage base and geographical location which is not mainstream in the North American industry. To have a strong finishing and slaughter sector it is essential to be at the mainstream and in a low cost grain surplus region.

- It builds on a solidly established cow-calf sector that is expanding, and an established network of small feeding operations that can play a key role in pre-conditioning backgrounded cattle for the large feedlots that finish in Alberta and the PNW. Pre-conditioning is gaining importance as a thrust for backgrounders. It involves bringing calves to small lot feeding centers where the calf is fed intensely for 4 to 6 weeks. The calf learns to eat in a feedlot; become culturally adapted to a group of animals; and disease susceptibility is reduced. For success and full benefit of pre-conditioning retained ownership is important.

- The basic breeding herd and genetics available to the industry are of high quality and a solid base to build from.

- The scale economies necessary to be a major player in the finishing and slaughter sectors of the North American industry are not yet possible in B.C. The cattle herd is just too small to support feedlots and slaughter plants that are going to be competitive in North America.

In addition to establishing its niche in the North American beef industry pursuit of this strategy will have as a fallout the production of more calves in the province, and a percentage of these calves will likely stay in the province to meet local finisher and slaughter demand.

2. *Major Recommendations Supportive of Strategy*

Recommendations supportive of this strategy are both industry and government related and several are set out below.

a) ***Industry Focused:***

- Mindful of map diagrams, set out in the report, that position B.C. in context of the North American beef packing industry B.C. must see itself in a context of looking outward - not inward - at the bigger picture of where its destiny and its customer base lies. The fortunes of B.C. industry will be dictated by the destiny of the total market place, which is facing serious problems on the side of consumer demand.

  To this end, it is strongly recommended that the B.C. industry - through the unity of its Beef Industry Associations - should seek closest possible liaison with counter part organizations in the Northwest region, and link itself with an Alberta, PNW and California axis for developing its future production and marketing strategies. Do not view the players of Alberta and PNW as foe, but as opportunity for expansion of the cow-calf and backgrounding sectors. This does not imply that existing finishers and packers in B.C. exit the industry, but continue to focus on niche markets that can be most effectively served by local producer and processor. This is because the realities of the situation for B.C. will be:

  - Dependence - for better or worse - on marketing to a growing concentration of feedlots and packers all located close together in Southern Alberta and/or the potato waste regions of PNW.

- Fifty percent of beef produced in Western Canada must be marketed in Eastern Canada (under growing competition from U.S. beef) or else South into U.S., including California. The study team believes the California market is the best shot, but grading is a barrier.

- U.S. major packers (Cargill, Alberta; and IBP Washington-Idaho) will have a major influence on the total northwest beef market, and will be doing what is best for them, in a situation of industry concentration. All cattle producers in the region must liaise together in their own best interests, especially to produce the beef that is most suitable to improve consumer demand.

- Producers must recognize that their real competition is poultry (growing in Canada) or pork, and must work in unity with national and U.S. organizations to maximize promotion benefits from combined check off programs. In pursuing such self-help objectives cattle producers must be aware that agriculture interests generally are facing a reduction in political influence with governments everywhere.

In this same context, there must be continued national self-help programs to feed back research and market information to producers if they are to be fully competitive.

- In pursuit of the strategy, the current and growing state of weakening consumer demand for beef in North America, causes the study team to recommend that B.C. producers exercise prudence and:
    - Approach any new financial investment with extreme caution.
    - Not to be deluded by recent years of cattle feeding profitability caused mainly by low cost grain (feed grain costs will rise slowly, and impact on economics of cattle feeding and feeder cattle values).
    - Not to be deluded by availability of new Feeder Association loans at low interest, with temptations to over-invest in cattle feeding or over-expansion at the wrong time. Debt load must be minimized. The low-cost producer will benefit most in the years ahead.
- An ancillary part of the strategy to build the strongest cow-calf sector in North America is opportunity for diversification. It is recommended that B.C. cow-calf producers be encouraged to develop tourism as a secondary industry in the scenically attractive inland regions of B.C. This could include bed/breakfast facilities on ranches for screened tourists, with logistical support from travel agencies (This business is well established in Australia). If necessary government assistance could help promote the development.

- It is recommended that the B.C. industry leadership work its utmost to urge the national industry to pursue beef grading equivalence with the U.S. The sooner this is achieved, the quicker Canadian table beef will find better market outlets in U.S. without suffering price discounts equivalent to U.S. "select grade". In absence of such grading equivalence, B.C. producers must alternatively focus on selling their live cattle (at whatever stage) to best advantage into the U.S. - there will be better value alive than dead.

  It could be argued that if the focus is to sell cattle for feeding why should B.C. worry about grading as it is not a problem. Wrong, it is a problem because if grading is equalized across the border B.C. cattle may have an expanded opportunity for sale to Alberta finishers, (because more beef will be sold in the U.S.) and the producers will have a better and more consistent signal concerning what characteristics to breed for.

- Environmental management - together with animal rights, licences, permits and leases on Crown range land - will be of importance to B.C. cow-calf producers and backgrounders. There should be a pro-active unified effort to seek status officially for cow-calf producers as "managers" of range land they use, with assumption of specified responsibilities for taking care of same. In this way, cattle producers must foster a public image of being "protectors of the environment".

Cattle feeding operations will necessarily be subject to increasing environmental restraints. To this end, the B.C. government should examine options of assisting feedlots close to metropolitan areas to sell/move with exemption from zoning laws - perhaps with a provision that they re-invest windfall benefits elsewhere in the B.C. cattle industry.

- The industry must promote a positive image for beef. Generally observations in supermarkets of Vancouver, Victoria and other cities of B.C. evidenced a high standard of marketing of beef. However, Save-On-Foods supermarket chain was using a technique that could be detrimental to beef in the long run.

  Save-On-Foods features certain meats including beef in a special cabinet section called "Our First Choice" - wherein signs proclaim that all the meat has been aged and tested (privately) for 25 horribly - sounding residues and hormones (all listed by name). It seems obvious if any good is achieved by making the public conscious of all these evil-sounding chemical residues - certainly there is risk of negative impact if consumers are prompted about all the un-tested meat on display in other cabinets. This practice should be reviewed.

b) ***Government Focused:***

It would not be in the industry's best interests to advocate any additional programs that are intended to support cattle prices. Better management of private markets for inputs and cattle rather than government subsidies should be the direction of the future because price subsidies distort markets and create situations which prohibit the industry from seeking its true competitive position. As the industry transitions to less dependence on government programs the following recommendations for government action should be implemented.

- A logical place for help from government (which should not offend GATT nor the Free Trade Agreement) is educational programs to guide cattle producers and feeders on their best individual strategies for producing cattle best suited to market needs. To this end:

    - It is recommended that the B.C. government support the cost of appointing independent professional livestock marketing advisors to the staffs of auction markets in B.C. to advise clients on best business strategies - including close communication with feedlots and packers in B.C. Alberta and PNW. Trials are suggested with targeted auction markets as pilot programs.

    - B.C. government might also consider supporting a independent professional livestock marketing advisor to work with BCCA and BCACF for a limited period. Such an advisor should focus on developing close liaison with cattle feeders in B.C. Alberta and PNW, whose members are key customers for B.C. cattle producers (cow-calf/backgrounders) to determine exactly what the market seeks in the way of cattle.

- Government and industry should foster farm management education and advisory services on government risk management tools (like NTS and FII) so the cattle feeder can estimate returns (including from government) and bid competitively for animals. This service could be private or in an association, but not likely in BCMAFF as the predictions are risky. A small start up grant from BCMAFF to a private sector service is recommended.

- FII for backgrounding and finishing should immediately be restructured to a clear amount per herd or per cwt. announced in advance so B.C. feeders and taxpayers are better served.

- To assist the backgrounding sector while allowing some trickle down, some funds should be transferred from the FII finisher to the backgrounding part of the restructured FII (for example $5.00/head).

- To insure GRIP aid to Alberta silage in 1992 and later is kept on a level playing field, the restructured FII should be supplemented by an equal amount with funds made available from Ag Canada and BCMAFF jointly as per the aid to Alberta silage.

- BCMAFF and industry should embark on a major program to lower harvested forage cost per nutrient through for example:

    - education on the merits of silage rather than hay systems;

    - fostering silage equipment sharing or custom silage harvesters.

Special efforts should be made over the next 3 years in the two areas with known competitiveness for backgrounding (Bulkley and Peace). Perhaps funds from FII (finishing) or elsewhere could be directed towards these two areas totally converting to silage.

- Industry with help from BCMAFF try to change the forestry department policies (still written into law but sometimes waived) requiring overwintering and appurtenant lands. Phasing out both policies would allow regions of high cost forage to either transport forage in or cattle out for the winter period. Recognizing the natural economic disadvantages for overwintering of each area could result in more grassland backgrounding during the summer and a phasing out of cow-calf completely in some areas.

It may be argued that commensurability adds stability to the livestock industry. Maybe the same goals can be met through other policies that do not influence the natural economic advantage of an area.

B.C. has the greatest reliance on crown range anywhere on the continent. Hence this recommended policy change must be implemented in close co-operation with all vested interests (i.e., wildlife, forestry, agriculture, environment and tourism). An integrated resource management approach area by area must be developed.

Education of producers to better utilize Crown range through intensive grazing techniques in feasible areas will result in significant economic gains.

- In view of generally high B.C. cattle production costs, industry together with BCMAFF should encourage rapid computerization of commercial size ranches and feedlots and foster management clubs and private compilation of financial ratios across the industry.

- Annual net benefit results should be publicized more by BCMAFF and by association newsletters. Monitoring of other provincial programs should be the designated task of at least one director of BCACF and of BCCA plus one staff member of the Financial Programs part of BCMAFF. These three people might meet in an informal committee that includes the B.C. representative on the expert committee and on the CCA. The committee should report to annual association meetings on areas for action.

- Industry should attend the federal/provincial transportation consultations in early 1992 and support change of the method of paying the crow benefit to a buy-out.

- BCMAFF should extend NISA to include beef cattle production by 1993 after GATT deal is known and adjustments considered.

c) *Secondary Recommendations*

- Cattle feeder loan associations in B.C. need continued expansion and some fine tuning. The feeder associations need to work on improving their visibility and the public's knowledge of how they work. The more participation these associations experience, the more widely spread is the loan risk, since the payment of defaulted loans will be spread over a larger number of participants. However, individual debt must be carefully managed and minimized to avoid default.

- BCCA's BIDC has played a useful role to build industry vision and should be funded at least until the end of 1993 through federal/provincial funds. BIDC should not be a subsidiary to BCCA or any one association, but a structure to foster implementation of recommendations of this and other studies that help set a vision for the industry.

- In view of the high cost of collaboration between B.C. cattlemen spread across the province, BCMAFF and industry should explore the greater use of distance eduction techniques (for which B.C. educators are recognized nationally).

- In conjunction with major recommendations to foster better risk management practices on the part of producers, BCMAFF direct education funds to helping cattlemen also learn the use of private risk management alternatives.

d) *Issues Needing Further Study*

- In view of ALR constraints to exiting the sector (by uncompetitive Fraser Valley finishers) BCMAFF should review and possibly develop programs that could assist feedlots that want to move their businesses to Bulkley or the Peace. Such aid could be less costly than continued FII or more FFA in the long run. Assistance provided should be lower if existing feedlot facilities received government grants for improvement or establishment.

- More study is required to implement the educational programs suggested for improving information flows to cow-calf operators related to price signals and the kinds of cattle being sought by the market.

The study team believes that B.C. has a good future in the North American beef industry if the participants of the industry come together and pull together toward a common vision with clear objectives that build on the comparative advantages of the region and its sub-regions. The recommendations have been made with this in mind.

II. BACKGROUND

A. Canadian Beef Industry

The cattle and beef industry of Canada accounts for 10.8 billion dollars in sales and is among the leading industries of Canada. This has been relatively constant over the past ten years. Also, the industry is a major employer in the country. It is an important economic sector and its health as an industry is important to the country. A few comments about the industries position in relation to the world and North American beef industries helps provide background perspective.

Through to the mid 1980's, Canada was somewhat immune to volatility affecting industry structures in other major beef producing countries because the market was insular.

During the 1960's, when growing consumer demand for beef spurred production increases world-wide for a 15 year period ending in 1975 - Canada played a leading role in meat industry technology development. Its industry leader - Canada Packers Ltd. - was a progressive firm and world recognized as an innovator, whose feats included:

a) Establishing the CANPAK system for beef slaughter operations, which attracted steady visits by many overseas industry people.

b) Creating (from its base meat operations dating back to 1920's) new beef packing/processing operations in Western Canada, while also expanding in other directions as Canada's largest food company.

c) Creating the largest, most sophisticated private meat research laboratory in North America (located in Toronto) which has now been closed by new owners.

d) Expanding internationally into many meat-related operations and joint ventures with foreign partners - including pioneer establishment of indoor hog breeding in Australia (plus beef and sheep meat plants throughout Australia); joint venture meat processing operations in U.K. (with Sainsbury), Germany and Mexico; plus trading operations in U.S., Tokyo, London, Hamburg, Hong Kong and other major trading centers.

Among other well-known Canadian meat packers up until 1980, Swift Canadian Ltd. (later to change name to Gainers) was the competitive number two player in Canada's industry, having links to the worldwide Swift organization dating back to the last century.

Both Canada Packers and Swift were among the group of original beef packers who slaughtered high quality grass-fed cattle in B.C. during years following World War II, but these B.C. slaughter plants gradually closed with the shift of cattle slaughter toward the prairie grainbelt.

While Canada's beef industry structure kept relatively stable through to the mid-1980's (partly helped by government control restraints on poultry supply growth), meat packing industries in other countries underwent radical changes. A few examples included:

a) **U.S.**

The "big 4" meat packers (Swift, Armour, Wilson, Cudahy) were all acquired during the late 1960's by non-meat conglomerates, only to be dis-owned a decade later amid problems of unprofitability accompanying a meat industry revolution caused by the new comer IBP.

b) **Australia/New Zealand**

Major meat industry realignments followed the crisis years of the mid-1970's, when major worldwide cattle supply build-ups were slaughtered in the mid 70 economic recessions.

c) **EEC**

Major restructurings have occurred, especially in Denmark, Holland and Ireland, the traditional EEC export countries.

The Canadian meat industry was, on the surface, unscathed by the rampant forces of disruptive change occurring outside its borders. This was partly due to the supply controls on poultry.

Internally, however, Canada was becoming introspective and more insular:

a) The federal government - reacting to severe recession in U.S. agriculture in the early 1980's- established financial (Tripartite) supports for Canadian farmers, from 1985 onwards.

b) The meat industry leader - Canada Packers - began retreating from most of its foreign meat operations; by 1988, it had only its overseas trading offices left. Meantime, its meat operations within Canada were beginning to close from age (e.g., Edmonton, Winnipeg), or mark time without any new investment being made. The reason -- declining profitability caused by excess industry capacity and lack lustre demand for red meats by Canadian Consumers in the early 1980's.

c) Other Canadian meat packers also drifted into decline, with Swift closing some of its packing plants before being acquired by a private Albertan owner (Pocklington) and operated under the new name of Gainers. This move coincided with new political aspirations by the Alberta government to rebuild the Canadian meat industry, in immediate proximity to Alberta's large cattle and grain base. The Alberta government had support funding in mind for this purpose, but elicited little initial response except from Mr. Pocklington.

A major ownership change occurred in the Canadian industry when a foreign investor acquired a position in the Canadian meat industry for the first time. Cargill (a leading U.S. agriculture commodity trading and agribusiness grain/feeding firm) showed interest in 1987 in establishing a packing plant. Cargill - already owning one of the "Big 4" U.S. packers (Excel)- was enticed (with a large start-up grant from the Alberta government) to commit to build in 1988 a new state-of-the-art beef slaughter plant in Alberta. This new modern plant - when completed at High River, Alberta in mid 1989 - set about acquiring substantial market share for itself. Its "high bidding for cattle, and low-price selling to customers" policy quickly created trading losses for its competitors as it began nationwide discount selling.

B. Beef Industry British Columbia (B.C.)

British Columbia (B.C.), has grown by 8% to 3.2 million people in the past five years and is estimated to reach a population of 3.6 million by the year 2000. This growth occurred while Canada's total population grew by 5% to 26.6 million. B.C. population growth has been substantially stimulated by immigration. B.C. is Canada's third most populous province, and with the faster population growth and high level of immigration, the market for meat is dynamic and in transition to meet changing consumer tastes. The changing tastes not only result from immigrants of different culture, but from a health consciousness which has impacted red meat markets throughout North America.

B.C. supports a substantial beef and dairy industry which increased by over 9% to 740,000 head in 1990 (from 690,000 head in 1986). Most of this growth came in the beef sector, as the dairy herd remained constant at about 115,000 head. A SCI/KenAgra calculation of direct revenue and employment estimate based on existing cattle sales and industry slaughter through-put suggests that the cattle industry of B.C. contributes about $375 million to the B.C. economy. It is also estimated to contribute about 6,000 to 6,500 jobs. B.C.'s primary participation in the beef industry consists of cow-calf operations that produce high quality feeder calves. The industry also backgrounds and feeds some 30 to 35 percent of the calves and slaughters a large percentage of these in B.C.

Most calves produced in the province are sold to feeders in Alberta or the U.S. At present, there is not a larger cattle feeding industry in B.C. because protein supplements and grain must be imported at high cost. Because of this, B.C. imports finished beef, primarily from alberta and also some from the U.S., which offsets feeder cattle B.C. has exported to Alberta.

Alberta has had a surplus capacity of beef packing plants, but in 1991 this situation changed. Overall, Alberta is increasing as a slaughter location while slaughter and packing is declining in the rest of Canada, including B.C. (in fact, the authors of the report "Competitiveness of the Beef Industry in Canada and Beef Imports", May 1991, say "Alberta is the only major cattle producing province in Canada with a high growth potential for producing feeder cattle and a packing industry infrastructure with any hope of long-term viability". The beef shipped back to B.C. is processed and distributed by a few, and some large, Alberta based packers and returns as value-added cuts. An added factor that has drawn cattle away from B.C. slaughter plants in 1990 and early 1991 has been the increased demand in the U.S. for feeder and slaughter cattle.

In recent years there has been concerns raised as regards expansion of feeding and slaughter operations in B.C., particularly the lower Fraser Valley.

The B.C. beef industry is at a turning point where the cattle based industry, particularly beef must understand its competitive environment.

These issues, among others, have caused the B.C. beef industry, government and industry stakeholders, to become concerned about the future competitiveness of B.C.'s beef industry. For this reason the B.C. Ministry of Agriculture, Fisheries and Food invited Sparks and KenAgra to analyze B.C.'s competitiveness in the North American beef industry. In addition the impact of government programs on the support of the industry in the future have been addressed. This report presents the findings, conclusions, recommendations of the study made to address these concerns and issues.

Key concerns and issues have been:

- Can B.C. beef industry participants produce and process meat competitively enough to ensure a long term presence in B.C.;
- Can B.C. slaughter/processors expect to receive an assured supply of proper quality fed cattle from B.C. producers in sufficient quantity to support their operations;
- Can B.C. cow-calf and feeders expect to be able to compete effectively from B.C. in the changing North American beef industry; the technology contained in the cow-calf and beef feeding structure may exaggerate inefficiencies during a competitive crisis;
- Can B.C. cow-calf and feeders operate in an environmentally socially responsible manner;
- Can the B.C. provincial government provide proper support to ensure the continued operation of a viable beef industry in the province.

III. INDUSTRY SITUATION AND COMPETITIVENESS

A. Introduction

The B.C. beef industry is an integral part of a North American beef industry. Therefore, a meaningful analysis of the industry in B.C. should be done in the context of the North American industry. In recent years, large numbers of feeder calves have left B.C. for feedlots in Alberta and the United States Pacific Northwest. Also, some calves finished in B.C. have moved across these same borders to slaughter/processing facilities. Finally, beef sides and quarters as well as Cryovac packed consumer ready beef products are shipped into B.C. from Alberta and/or the United States. Many of the forces driving the United States industry will be similar for Canada and B.C. The beef industry is truly North American and interdependent across the U.S. and Canadian border.

B. Overview of North American Beef Industry

Perhaps no other facet of North American agriculture or industry has been as romanticized as has been the cattle business. Throughout history, beef has been a preferred food and the people producing it, folklore legends. Today, the beef industry is both tradition bound and innovative. Participants vary from cow-calf producers (where some operate substantially the same as their counterparts a century ago) to large scale feeders and packers who have been responsible for the state-of-the-art status existing in their respective segments.

In North America the development of rail transportation and barbed wire ended the trail drives and open range and the importation of British breedstock (Angus, Hereford, Shorthorn) significantly improved the native Longhorns. A packing industry that would remain static and dominant until the 1960s grew up around the urban rail terminals and adjoining stockyards. Corn belt farmers began finishing western-bred feeder calves in order to utilize off-season labour and add value to corn crops. Because beef has never been cheap to produce, these trends accelerated as post-World War II affluence fueled the demand for finished beef.

The North American Beef industry has experienced rapid and significant changes over the past twenty five years. There was rapid growth in per capita consumption of beef from the mid-1960's to 1976 (i.e., in the U.S. it went from 65 lbs./capita to 94.5 lbs./capita (29.5 to 42.9 kg/capita)) and then declined to present levels of 67.5 lbs./capita (30.6 kg/capita). In per capita consumption terms the industry has returned almost to where it was in the mid 60's. From 1960 to 1974 the longest sustained growth in cattle numbers in this century was experienced. However, this was followed by a nearly uninterrupted decline for the next decade. Added to this there have been substantial changes in the traditional ownership and marketing patterns in the industry, with notable changes occurring in beef processing, particularly in terms of concentration and merchandising methods.

For the most part, farmer-feeders fed in lots of 500 or less and it was not until the 1940s that larger scale (5,000+) (small by today's standards where many yards carry over 30,000 head per cycle) feedyards began appearing in the California desert. These larger-scale, automated feedlots in California served as a model for the development of similar facilities throughout the High Plains region, east of the Rocky Mountains, but especially in the Texas panhandle. Perceptive cattlemen recognized the opportunity presented by a dry, favourable climate, surplus feeder cattle, and the availability of quality feedstuffs, mostly dry land milo. As the Ogallala aquifer was developed for irrigation, more feed grains, especially corn, became available.

Concurrent with the development of these feedyards in the 1960s, a meat packing firm with some radically different and innovative ideas was founded and dramatically changed the packing industry. Iowa Beef Packers (Later Iowa Beef Processors) correctly reasoned that the proper location for a packing plant was not at a distant urban rail terminal but rather in the same rural area where the cattle were produced. They also recognized that modern, efficient, high-volume, and high fixed-cost plants were vastly more competitive than the old, low-volume, high variable-cost plants then existing. To make the picture complete, they adopted an extremely tough stance with organized labour. Within a decade, all the terminal plants were closed and the industry was dominated by IBP and other imitators, with the former leaders - Swift, Wilson, and Armour - reduced to belatedly playing "me too."

The international setting in which the North American beef industry operates has also changed and will continue to be a dynamic force for change. Changes in the structure of the international economy have altered the way monetary and fiscal policies affect the sector. There have been changes in protectionist policies in many countries and more may occur as a result of current GATT talks. Other countries have opportunities to improve their technology employed and expand beef production on what might be a more competitive basis.

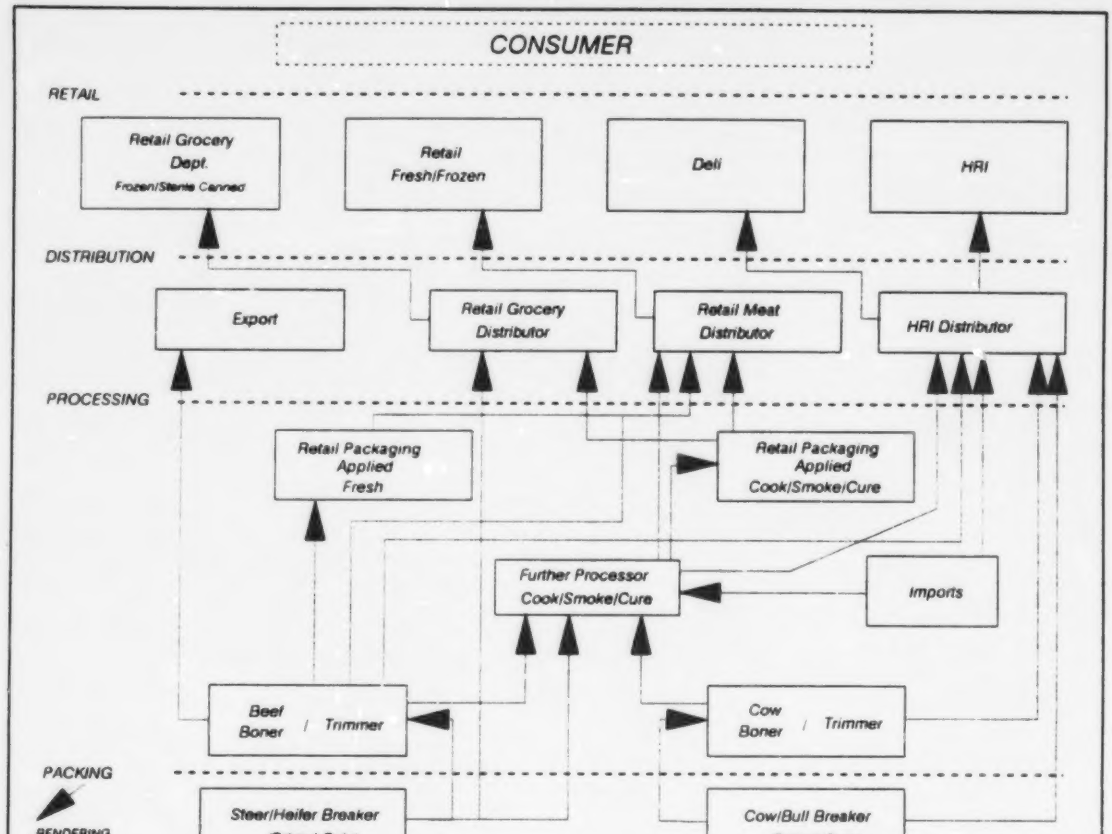
These developments have raised questions about the ability of the North American beef industry to compete, both domestically, for the consumer dollar and for the resources for production, and internationally, with beef producers in other countries. These forces raise questions about the future structure and organization of the North American beef industry. It is important that these forces be examined to determine direction for the beef industry in the province of B.C., to identify what the province, and individual producers need to do to adapt to changing conditions.

C. Industry Structure and Organization

The North American beef cattle industry, particularly in the U.S. is the largest sector of the agricultural economy and consists of some rather sharply defined segments with only a limited amount of formalized integration between them, but increasing.

The participants are basically segmented into purebred breeders (input supply segment), cow-calf producers, backgrounder/stockers, feeder-finishers, slaughters, processors, distributors and retailers. The relationship of the segments is set out as shown on Figure III-1. This study focuses on cow-calf producers, backgrounders, feeder-finishers, and slaughter/processors.

Figure III-1
Beef Industry Marketing Chain


CONSUMER
RETAIL
Retail Grocery Dept. Frozen/Sterile Canned
Retail Fresh/Frozen
Deli
HRI
DISTRIBUTION
Export
Retail Grocery Distributor
Retail Meat Distributor
HRI Distributor
PROCESSING
Retail Packaging Applied Fresh
Retail Packaging Applied Cook/Smoke/Cure
Further Processor Cook/Smoke/Cure
Imports
Beef Boner / Trimmer
Cow Boner / Trimmer
PACKING
RENDERING
Steer/Heifer Breaker (Primal Cuts)
Cow/Bull Breaker (Primal Cuts)
SLAUGHTER
Steer/Heifer Slaughter
Cow/Bull Slaughter
PRODUCTION
Feedlot Operation (Finishing)
Backgrounder/ Stocker Operation
Cow/Calf Rancher
INPUTS
Land
Feed
Genetics
Animal Health
Equipment

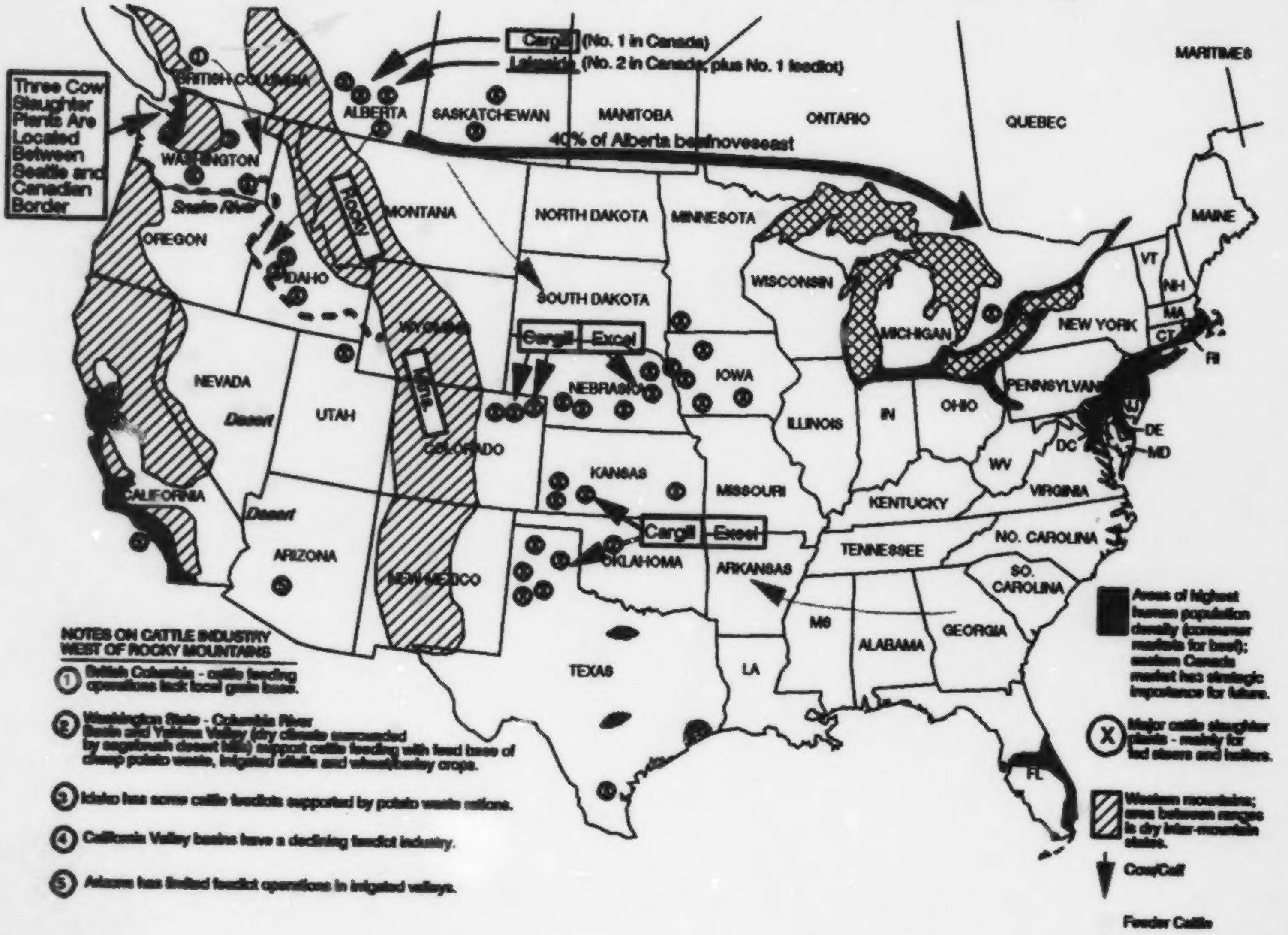
Set out on Figures III-2 and III-3 is an overview of where the segments of the industry tend to concentrate their activities in North America (U.S. and Canada).

Several characteristics about the segments can be noted including:

- Cow-Calf operations tend to be located in areas where forage is low cost and best harvested by grazing cattle. For example, in the southeast U.S. and on government and private controlled lands of the great plains region that runs from the Mexican border to the central regions of Canada.
- Backgrounding or stocker feeder operations tend to concentrate cattle in forage areas between the low cost grazing areas and the highly productive feed grain regions of the U.S. corn belt and the barley regions of Canada. Producers that lack winter feed or have an aversion to handling cows, will utilize their seasonal range resources in this activity.
- Feedlot operations tend to concentrate in areas where they have good access to feeder cattle, abundant high energy, and protein feeds, and dry conditions for open air lots. For example, the high plains of Texas, the middle plains region of Iowa, Nebraska, Kansas, and Southern Alberta.
- Slaughter/processor operations tend to concentrate activities in close proximity to the fed cattle centers and on good transportation linkages. This allows for low costs in assembling cattle to the plants and low costs for shipping the final products to market.
- Purebred Breeders have not been located on the map because there is no particular pattern to the geographical location of breeders.

While these tendencies predominate there are niche operators in each sector that succeed and defy the broad based industry trends, but even in these cases they have some special cattle supply, feed, or market situation that keeps costs in line with the industry average.

Figure III-2
Principal Location of Fed Cattle Slaughter Plants in North America Ⓧ


Cargill (No. 1 in Canada)
Lakeside (No. 2 in Canada, plus No. 1 feedlot)
40% of Alberta beefmoveseast
Three Cow Slaughter Plants Are Located Between Seattle and Canadian Border
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
MARITIMES
WASHINGTON
Snake River
OREGON
IDAHO
Rocky
Mtns.
MONTANA
NORTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
NEW YORK
VT
NH
MA
CT
RI
MAINE
SOUTH DAKOTA
Cargill
Excel
WYOMING
NEVADA
Desert
UTAH
COLORADO
NEBRASKA
IOWA
ILLINOIS
IN
OHIO
PENNSYLVANIA
NJ
DE
MD
DC
WV
VIRGINIA
CALIFORNIA
Desert
ARIZONA
NEW MEXICO
KANSAS
MISSOURI
KENTUCKY
Cargill
Excel
OKLAHOMA
ARKANSAS
TENNESSEE
NO. CAROLINA
SO. CAROLINA
MS
ALABAMA
GEORGIA
TEXAS
LA
FL
Areas of highest human population density (consumer markets for beef); eastern Canada market has strategic importance for future.
Major cattle slaughter plants - mainly for fed steers and heifers.
Western mountains; area between ranges is dry inter-mountain states.
Cow/Calf
Feeder Cattle

NOTES ON CATTLE INDUSTRY WEST OF ROCKY MOUNTAINS

① British Columbia - cattle feeding operations lack local grain base.

② Washington State - Columbia River Basin and Yakima Valley (dry climate surrounded by sagebrush desert hills) support cattle feeding with feed base of cheap potato waste, irrigated alfalfa and wheat/barley crops.

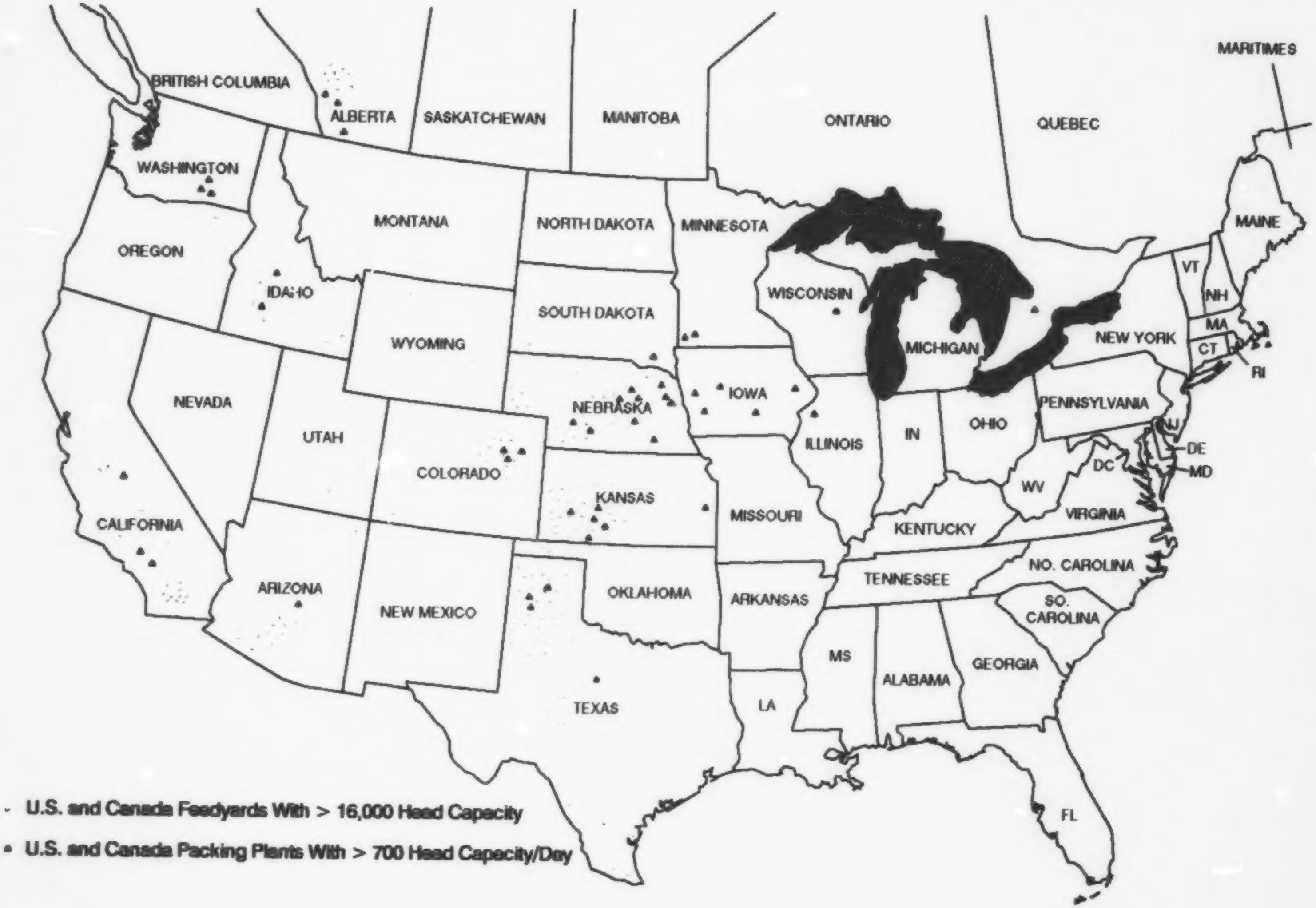
③ Idaho has some cattle feedlots supported by potato waste rations.

④ California Valley basins have a declining feedlot industry.

⑤ Arizona has limited feedlot operations in irrigated valleys.

Figure III-3

Comparitive Concentration of U.S. & Canadian Provincial Feedyards and Packing Plants


BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
QUEBEC
MARITIMES
WASHINGTON
OREGON
IDAHO
MONTANA
NORTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
NEW YORK
VT
NH
MAINE
MA
CT
RI
SOUTH DAKOTA
WYOMING
NEVADA
UTAH
COLORADO
NEBRASKA
IOWA
ILLINOIS
IN
OHIO
PENNSYLVANIA
NJ
DE
MD
DC
WV
VIRGINIA
CALIFORNIA
KANSAS
MISSOURI
KENTUCKY
ARIZONA
NEW MEXICO
OKLAHOMA
ARKANSAS
TENNESSEE
NO. CAROLINA
SO. CAROLINA
MS
ALABAMA
GEORGIA
TEXAS
LA
FL
- U.S. and Canada Feedyards With > 16,000 Head Capacity
▲ U.S. and Canada Packing Plants With > 700 Head Capacity/Day

The important point to keep in mind; however, are the key factors that tend to drive the business. In the case of cow-calf operators it is low cost available range; for backgrounding it is low cost available range and supplies of supplemental feeds when required; feeding and finishing is driven by low cost energy feeds and protein feeds, and, in the case of slaughter/processing the availability, and cost of the right kind of cattle are most important.

The importance of the various segments of the industry to B.C. are set out on the flow diagrams that compare cattle flows of the 1970-1980 (Figure III-4) period against 1990 (Figure III-5). The basic messages conveyed by these charts include:

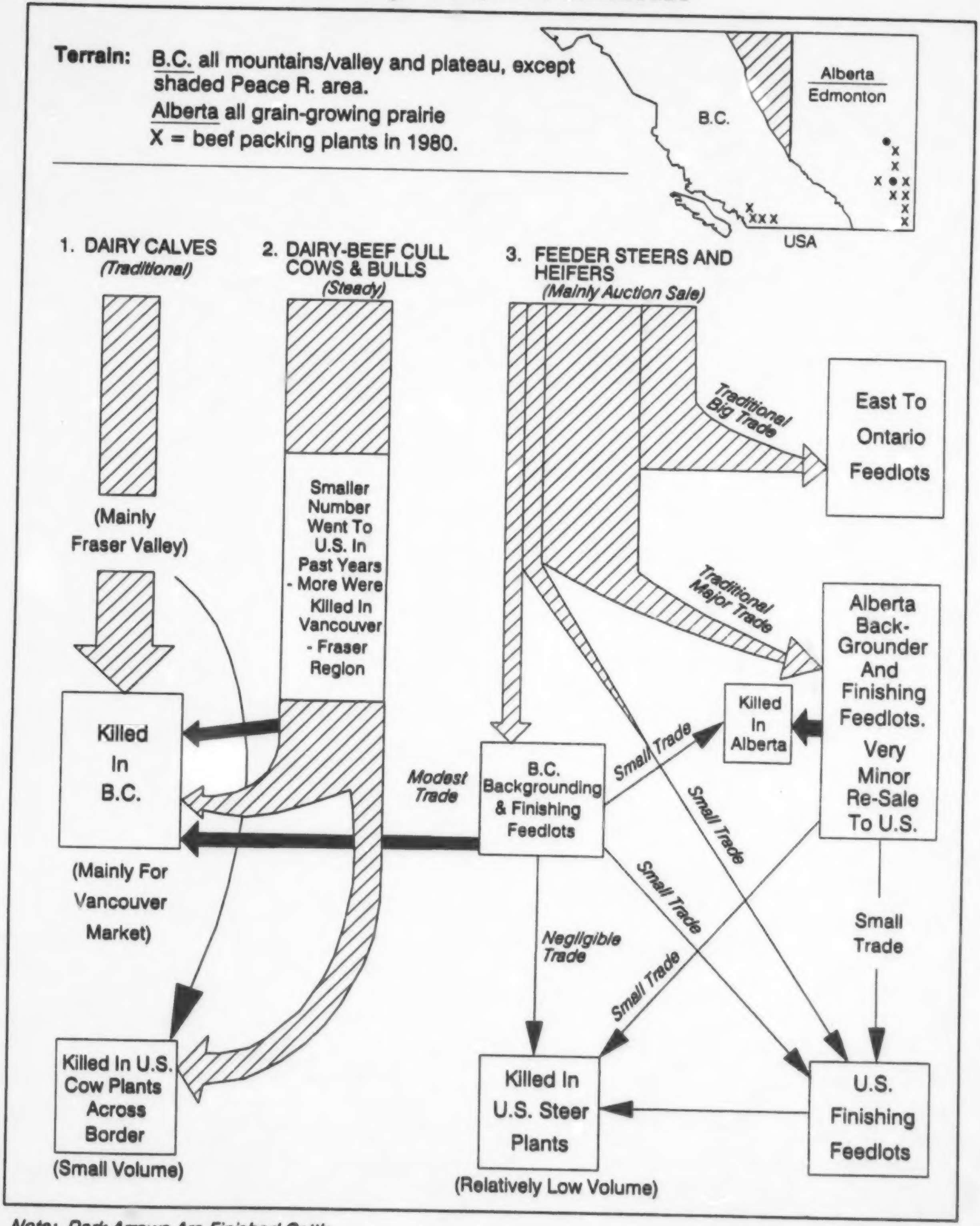
- Dairy calf trade has remained relatively constant from 1980 to 1990 with most calves moving to B.C. slaughter plants. A significant flow of calves went to U.S. packing plants.

- Dairy cull cows and bulls are slaughtered in both B.C. and the U.S. In 1990 the number of animals killed in the U.S. had increased significantly over 1980. Most of these animals came out of the Fraser Valley.

- Feeder steers and heifers sold at auction in B.C. move to four key markets--east to Ontario feedlots (traditional but now in sharp decline), east to Alberta backgrounding operations and finishing feedlots, south to finishing feedlots in the U.S., and to B.C. backgrounding and finishing feedlots.

- Culled cows and bulls from inland B.C. beef breeding herds mostly move to U.S. and Alberta plants for slaughter (including three cow killing plants between Vancouver and Seattle, who regularly attend B.C. auctions). With the closure during 1991 of the former CP plant at Red Deer, Alberta, the Gainer Edmonton plant becomes more important as a buyer of these cattle from Northern Alberta and B.C.

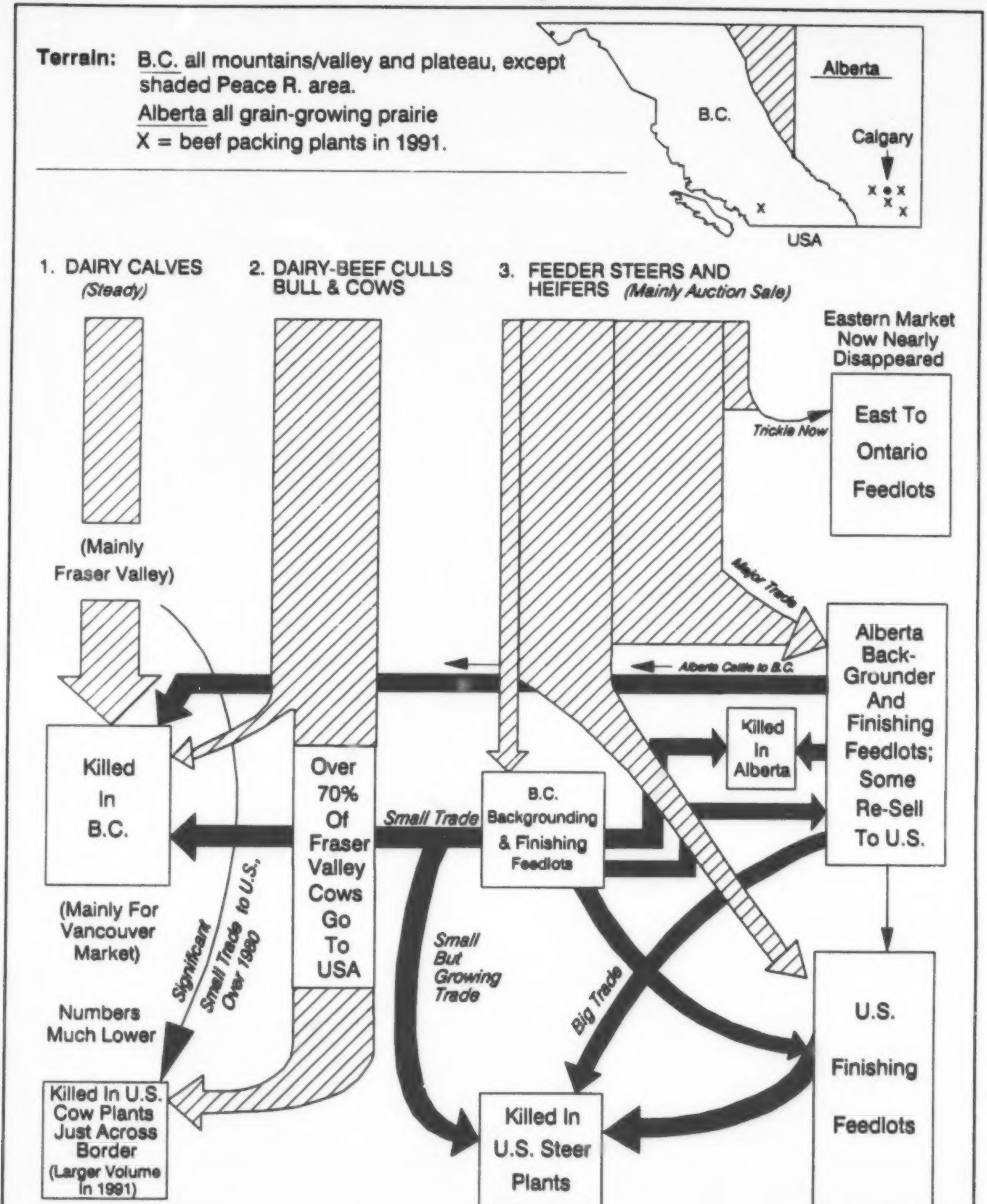
Figure III-4
Flows of Cattle Within and Outside B.C., and Location of Packing Plants, 1970-80 Decade


Terrain: B.C. all mountains/valley and plateau, except shaded Peace R. area.
Alberta all grain-growing prairie
X = beef packing plants in 1980.
B.C.
Alberta
Edmonton
USA
1. DAIRY CALVES
(Traditional)
(Mainly Fraser Valley)
2. DAIRY-BEEF CULL COWS & BULLS
(Steady)
Smaller Number Went To U.S. In Past Years - More Were Killed In Vancouver - Fraser Region
3. FEEDER STEERS AND HEIFERS
(Mainly Auction Sale)
Traditional Big Trade
East To Ontario Feedlots
Traditional Major Trade
Alberta Back-Grounder And Finishing Feedlots. Very Minor Re-Sale To U.S.
Killed In Alberta
Small Trade
Killed In B.C.
(Mainly For Vancouver Market)
Modest Trade
B.C. Backgrounding & Finishing Feedlots
Small Trade
Small Trade
Small Trade
Negligible Trade
Small Trade
Small Trade
Killed In U.S. Cow Plants Across Border
(Small Volume)
Killed In U.S. Steer Plants
(Relatively Low Volume)
U.S. Finishing Feedlots

Note: Dark Arrows Are Finished Cattle

Figure III-5

Flows of Cattle Within and Outside B.C., and Location of Packing Plants, 1990



Terrain: B.C. all mountains/valley and plateau, except shaded Peace R. area.
Alberta all grain-growing prairie
X = beef packing plants in 1991.
Alberta
B.C.
Calgary
USA
1. DAIRY CALVES (Steady)
2. DAIRY-BEEF CULLS BULL & COWS
3. FEEDER STEERS AND HEIFERS (Mainly Auction Sale)
Eastern Market Now Nearly Disappeared
East To Ontario Feedlots
Trickle Now
(Mainly Fraser Valley)
Major Trade
Alberta Cattle to B.C.
Alberta Back-Grounder And Finishing Feedlots; Some Re-Sell To U.S.
Killed In Alberta
Killed In B.C.
Over 70% Of Fraser Valley Cows Go To USA
Small Trade
B.C. Backgrounding & Finishing Feedlots
(Mainly For Vancouver Market)
Significant
Small Trade to U.S., Over 1980
Small But Growing Trade
Big Trade
Numbers Much Lower
U.S. Finishing Feedlots
Killed In U.S. Cow Plants Just Across Border (Larger Volume In 1991)
Killed In U.S. Steer Plants

Note: Dark Arrows Are Finished Cattle

J & L beef (and other small kill plants in the lower Fraser Valley) have been active in buying beef cows and bulls culled from beef and dairy herds. There is prospect for some expansion in B.C. in this cull cattle slaughter business.

- In 1980 the trade between B.C. and Ontario feedlots was greater than in 1990. In fact, trade in 1990 almost disappeared.
- In 1980 trade to Alberta was significant, but by 1990 it had become very important as an outlet for B.C. calves.
- Few calves were sold to U.S. feeders in 1980, but the trade to the U.S. had increased substantially by 1990. The quantity of feeders that move to the U.S. is highly dependent on the price of beef in the U.S. and it is uncertain whether the recent increased movements of cattle to the U.S. can be sustained. Presently, according to industry contacts, markets are weak and flows have slowed.
- The remainder of the calves tend to stay in B.C. for backgrounding and/or finishing.
- In 1990 the trade of B.C. origin finished cattle to U.S. slaughter plants increased over 1980. Also, U.S. buyers indicated they bought more B.C. cows and bulls in 1990-91.

In summary, trading of cattle from B.C. to external destinations has increased in recent years in the following pattern:

(i) From the increase in total cattle population between 1985 and 1991, more feeder calves (and more cull cows and bulls) were offered for sale - mainly through auction markets.

(ii) Traditional buyers in Ontario sharply reduced purchase of B.C. feeder calves, but feedlots in Alberta and PNW became highly competitive buyers for all available feeder calves. This demand was largely generated by U.S. feedlot profitability (up until August, 1991), helped by low-cost grain economics. The feeder cattle market ran high.

(iii) U.S. beef packers in north-west states also reached into Alberta and B.C. and bid strongly for all available finished cattle. The north-south flow increased.

(iv) Similarly, cow slaughterers in U.S. reached into B.C. to buy upwards of 70% of all available cull cows and bulls coming to market. This pattern may well continue.

(v) Some B.C. packers were unable to compete strongly against the combination of Alberta/U.S. packer buying, causing slaughter in B.C. to decline significantly after closure of the Intercontinental Packers Ltd. beef kill in Vancouver in September, 1990. J & L indicates it has been able to compete effectively in purchasing some Alberta cattle to complment its B.C. cattle kill.

Since August, 1991, the trend in (ii) has dropped sharply, and the trend in (iv) has eased, due to declining demand from U.S. This is likely to be the case for much of 1992.

1. *Purebred Breeders*

The purebred breeder segment is not a focus of this study, but it is an important component of the North American industry; therefore, an overview of the segment is prepared to complete the integrative relationships within the industry.

At the root of the cattle production chain, purebred breeders form the genetic base upon which the industry depends. Because breeding mechanics dictate that males have a broader influence upon a herd than cows, the vehicle for genetic improvement is the Bullpower sold by breedstock breeders to commercial cow-calf operators. However, breedstock females are becoming more important to cow-calf operators with the advent and continued development of embryo transplant technology.

A commercial cow-calf operator can now have a few genetically superior cows for use in producing embryos. The embryos are transplanted to surrogate cows of inferior genetics for beef production but with good mothering qualities. While this technology is gaining importance it is doubtful that it will become the predominant means for transmitting genetic improvement since such sophisticated practices are incompatible with prevailing range conditions in B.C.

Although the benefits of hybrid vigor are widely recognized, most crossbreeding is done at the cow-calf level, utilizing purebred bulls supplied by breedstock breeders. Farmers Hybrid made a brief attempt to introduce hybrid lines similar to their swine program, but met with very limited success. Curiously, some hybrid lines have developed but these were done as new breeds rather than as proprietary lines. Brangus (5/8 Angus, 3/8 Brahmin) and Santa Gertrudis (5/8 Shorthorn, 3/8 Brahmin) are two such examples that have been successful, particularly in the southern areas where they perform better than either parent.

The cow-calf producer of B.C. has traditionally produced using English breeds, but in recent years a transition has been made to growthier, leaner, and better converting breeds. In fact the Canadian Beef Boosters has been a move to develop better genetics for Canada and B.C. The choice of breed is something B.C. cow-calf producers should pay close attention because there is a trend on the part of slaughter/packers toward smaller, leaner animals that are very consistent when slaughtered and processed. B.C. producers, using the proper genetics, can develop a reputation for producing high quality calves and feeders and build a strong niche for a product they have a comparative advantage to produce.

This is supported by investigations being made by Dr. Jeff Savell of Texas A&M into how to improve beef quality. He says carcass size and quality are the beef industries biggest Achilles heel. In recent times, the industries ability to include a wide variety of genetics especially with the use of European breeds, means there are no two carcasses alike, says Savell. Yet for value-based marketing and branded beef to work, beef needs to look and taste similar every time. This is the weakness the industry should address, he says. Packers agree with him. The use of exotic blood has added to the weight problem, says one. This year in particular, exotics stayed on grass too long and then had to be fed to 1,400 lbs. to finish properly. This was too heavy for the standard slaughter house weight design and desired box beef size.

The breedstock business is highly fragmented and breeding decisions are made on a loose combination of performance data and show ring results. Breeders are quite responsive to customer needs and in the last two decades have radically changed the type of cattle produced from the short, blocky and fatter kinds (generally the English breeds) to the current growthier, leaner and better converting types. Most of the participants in this highly fragmented segment are small. There is little corporate investment.

2. *Cow-Calf*

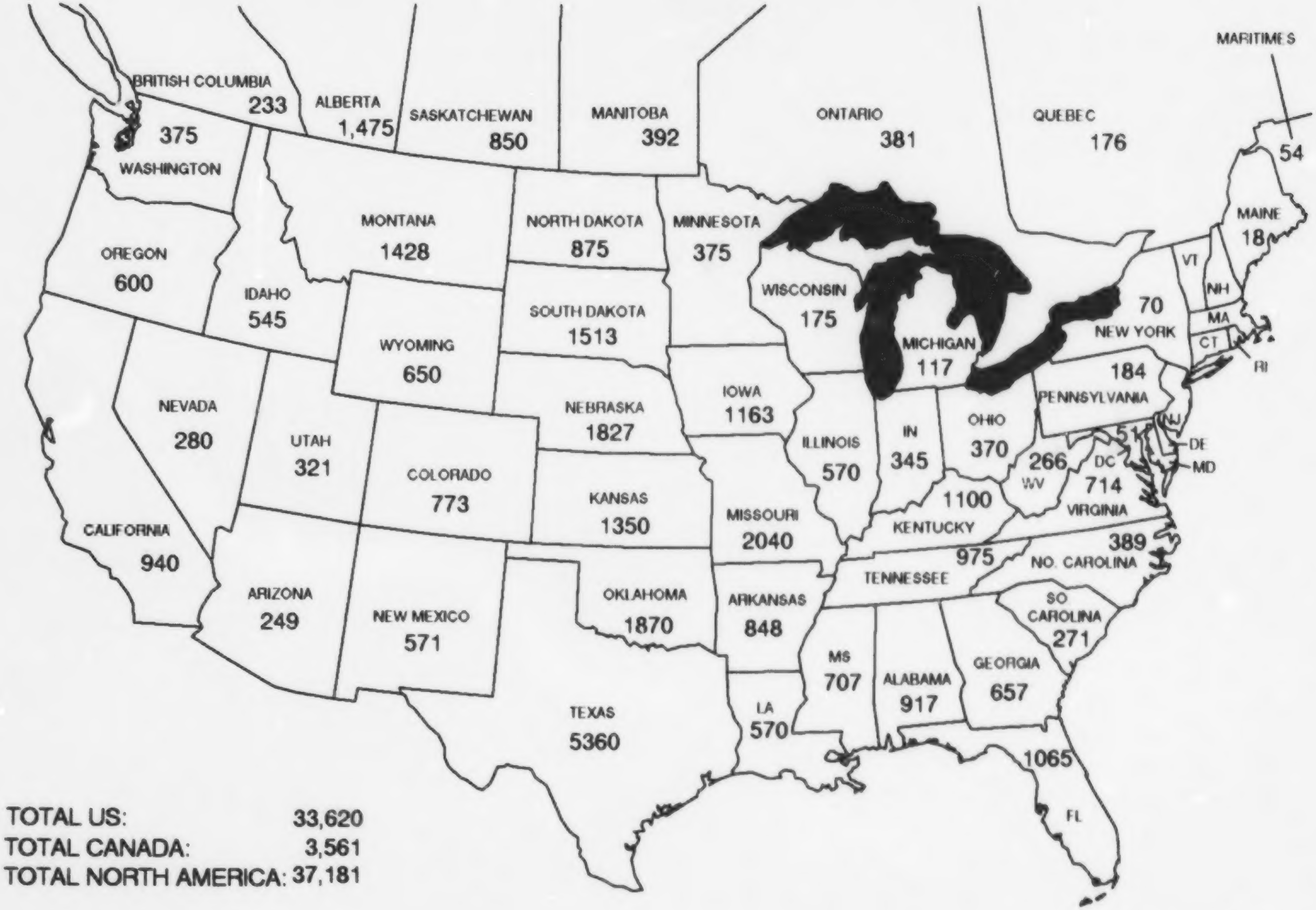
The cow-calf segment is the largest in terms of both participants and cattle numbers. Although widely spread, the areas of greatest intensity correlate with the availability of marginal or non-arable land and the lack of population density. Beef cow numbers in the U.S. and Canada for leading states and provinces are set out on Figure III-6. It shows that the U.S. beef cow herd, as of January 1991 was 33.6 million head. Data for July 1 showed this had increased to 34.5 million head. Canada at the same time reported 3.56 million head and B.C. accounted for 6.5% of this total. Canada's and B.C.'s cow-calf herds accounted for 9.6% and 0.6% respectively of the North American herd.

The data set out on Figure III-6 supports that the cow-calf herd is largely concentrated in the south central U.S. Also, it has strong concentration in the border areas of Montana, North Dakota, Alberta and Saskatchewan.

Data from the U.S. Census of Agriculture 1987 (see Table III-1) indicated that while there were a very large number of farms (over 425,000) with herds of less than 20 cows and a very small number of ranches (under 8,000) with herds of more than 1,000 cows, neither group produced more than 15% of the feeder calves. Indeed, over 70% of the calves were produced on ranches with herds numbering between 20 and 1,000 cows.

Data from the Canada Census of Agriculture 1986 (see Table III-2), shows a break down of farms having beef cattle. It indicates that while there are a very large number of farms (over 47,500) with herds of less than 17 cows and a very small number of ranches (under 550) with herds of more than 272 cows, neither group produces more than 15% of the feeder calves. Indeed, over 75% of the cattle are produced on ranches with herds numbering between 18 and 272 cows. It shows that the Canadian industry is, in terms of structure, a little different than the U.S. in that there are more cows on smaller farms.

Figure III-6
Number of Beef Cows by Province and State on January 1, 1991, (000's)


MARITIMES 54
BRITISH COLUMBIA 233
ALBERTA 1,475
SASKATCHEWAN 850
MANITOBA 392
ONTARIO 381
QUEBEC 176
WASHINGTON 375
OREGON 600
IDAHO 545
MONTANA 1428
NORTH DAKOTA 875
MINNESOTA 375
WISCONSIN 175
MICHIGAN 117
NEW YORK 70
VT
NH
MAINE 18
MA
CT
RI
SOUTH DAKOTA 1513
WYOMING 650
NEVADA 280
UTAH 321
COLORADO 773
NEBRASKA 1827
IOWA 1163
ILLINOIS 570
IN 345
OHIO 370
PENNSYLVANIA 184
NJ
51
DE
MD
DC
WV 266
VIRGINIA 714
KENTUCKY 1100
CALIFORNIA 940
KANSAS 1350
MISSOURI 2040
TENNESSEE 975
NO. CAROLINA 389
ARIZONA 249
NEW MEXICO 571
OKLAHOMA 1870
ARKANSAS 848
SO CAROLINA 271
MS 707
ALABAMA 917
GEORGIA 657
TEXAS 5360
LA 570
FL 1065

TOTAL US:	33,620
TOTAL CANADA:	3,561
TOTAL NORTH AMERICA:	37,181

Source: AG CANADA, USDA

Table III–1:

Number of Beef Cow–Calf Farms and Cows and Calves on Farms, 1987, U.S.

Size Groups: Cow–Calf Farms	Number of Farms	%	Number of Cows/Calves	%
1–9	212,947	18.1	1,132,157	1.2
10–19	209,553	17.8	2,899,513	3.0
20–49	326,788	27.8	10,295,635	10.7
50–99	208,610	17.7	14,412,562	15.0
100–199	130,137	11.1	17,497,300	18.3
200–499	66,023	5.6	19,121,471	19.9
500–999	14,904	1.3	9,881,986	10.3
1,000–2,499	5,649	0.5	8,043,581	8.4
2,500	1,736	0.1	12,583,094	13.2
	1,176,347	100	95,867,299	100

Source: 1987 Census of Agriculture – U.S.

Table III–2:

Number of Beef Cow Farms and Cows on Farms, 1986, B.C. and Canada

	B.C.		Canada		B.C. as	B.C.		Canada		B.C. as
Size Groups: Cow–Calf Farms	Number of Farms	%	Number of Farms	%	% Canada	Number of Cow–Calves	%	Number of Cow–Calves	%	% Canada
1–17	3,676	62.6	47,290	47.3	7.8	20,094	9.4	370,067	11.4	5.4
18–47	1,109	18.9	32,880	32.9	3.4	32,134	15.0	962,158	29.8	3.3
48–122	695	11.8	16,251	16.3	4.3	53,921	25.1	1,168,381	36.0	4.6
123–177	159	2.7	1,959	2.0	8.1	23,081	10.8	282,228	8.7	8.2
178–272	134	2.3	989	0.9	13.5	28,310	13.2	209,173	6.6	13.5
273–527	64	1.1	447	0.5	14.3	23,352	10.9	157,072	4.8	14.9
528+	31	0.5	105	0.1	29.5	33,778	15.7	92,962	2.7	36.3
	5,868	100.0	99,921	100.0	5.9	214,670	100.0	3,242,041	100.0	6.6

B.C. had 9,333 farms that reported beef cattle in 1986 (latest year of the census). These farms reported a cow herd of 214,670. It has since risen to 233,000 head. There were a very large number of farms (over 3,600) with herds less than 20 cows and a very small number of ranches (under 35) with herds of more than 550 cows, neither group produces more than 15% of the feeder calves. Indeed, over 70% of the calves are produced on ranches with herds numbering between 20 and 550 cows. It shows that the B.C. industry, in terms of structure, is not significantly different than the U.S. or the rest of Canada. It suggests that, from the point of view of structure, B.C. cow-calf operators should not be at a major disadvantage to other producers in North America.

3. *Backgrounding*

The backgrounding segment takes calves after weaning and carries them until they are ready to place in a feedlot. Traditionally participants in this segment, especially those that lack winter feed or have an aversion to handling cows, will utilize their seasonal range resources by purchasing weaned calves and adding several hundred pounds of grass gains before, in time, selling them to cattle feeders. A regional variation of this practice occurs in the winter wheat belt of the High Plains in the U.S. where local farmers will turn calves out on the wheat after it has gone dormant for the winter.

It should be noted that the backgrounding segment (grazers of feeder cattle), is gradually losing its separate identity (in the U.S., Canada and B.C.) because of a combination of factors involving heavier weaning weights, feeding younger and lighter cattle, and the development of the "pre-conditioning" activity (drylot "backgrounding") of feeder calves.

Therefore, the segment overlaps with cow-calf producers that keep calves until they are ready to go into feedlots and with finishers that tend to buy calves and keep them on hay or range until ready to place in the feedlot. Statistics that report the number of cattle in backgrounding operations is unavailable due to this lack of clarity between the various enterprises. What can be said is that all cattle between weaning weight (usually about nine months of age) and the weight sought by the feedlot (weight reached generally at twelve to fifteen months of age) are being backgrounded.

4. *Finishing*

At the finishing segment of the industry widespread corporate investment and organization are encountered. That involvement is concentrated in the large-scale feeding operations which include on-site, dedicated feed mills and other fixed-cost investments which permit some economies of scale. These large-scale operations (< 8,000 head one-time capacity) in the U.S. amount to about only 1% of the feeders in the 13 leading states, but feed 66.7% of the cattle in those states and 54.7% nationwide (Table III-3). In 1990 the 205 feedlots in the U.S. with more than 16,000 head one-time capacity accounted for nearly 51.7% of 1990 fed cattle marketings in the 13 leading states.

The largest number (about 60,000) of recorded feedlots are those with a one time capacity of less than 1,000 head. It is hard to consider these feedlots as commercial operations because they are typically farmer-feeder operations in which the operators own all the cattle in their feedlots. As margins narrowed and losses accrued in the early '80s, many farmer-feeders turned to other crops which, with government programs, were not as risky. Table III-3 illustrates the concentration that exists in the cattle feeding segment. Figure III-2 shows the principal cattle feeding states in the U.S.

The study team investigated sources for information on the number of feedlots in Canada, but these statistics have not been kept as a regular statistic. Industry contacts indicate that while the number of feedlots is not reported, they have definitely been increasing in size and becoming fewer.

Table III-3:

U.S. CONCENTRATION IN THE CATTLE FEEDING SEGMENT
1983 & 1990 - 13 LEADING STATES

Feedlot Capacity	1983				1990			
	Number of Feedlots		Cattle Marketed		Number of Feedlots		Cattle Marketed	
0-1,000	62,813	(97%)	4,982,000	(22%)	42,507	(96.3%)	3,474,000	(15.4%)
1,000-1,999	899	(1.4%)	1,394,000	(6%)	647	(1.5%)	936,000	(4.1%)
2,000-3,999	391	(0.6%)	1,392,000	(6%)	375	(.8%)	1,444,000	(6.4%)
4,000-7,999	215	(0.3%)	1,575,000	(7%)	218	(.5%)	1,654,000	(7.3%)
8,000-15,999	192	(0.3%)	3,106,000	(14%)	189	(.4%)	3,389,000	(15.0%)
16,000-31,999	130	(0.2%)	4,370,000	(19%)	127	(.3%)	4,763,000	(21.1%)
32,000-up	71	(0.1%)	5,761,000	(26%)	78	(.2%)	6,901,000	(30.6%)
	----------		-----------		----------		-----------	
	63,711	Total Feedlots	22,528,000	Total Cattle Marketed	44,141	Total Feedlots	22,561,000	Total Cattle Marketed

Reports from Alberta Agriculture, Animal Industry Division indicated that in 1980 the number of slaughter cattle sold by farms over 2,000 head (1% of the finishers) sold 41% of the head. In 1986 the same groups accounted for 3% of the producers and sold about 60% of the cattle.

A total of 98 feedlots were reported to be in operation in B.C. in 1991 (Table III-3A). Of these, 24 lots had capacity to feed more than 1,000 head per turn. These larger lots fed more than 70% of the fed cattle. Twenty feedlots operate as backgrounders only. The implication drawn is that B.C. feedlot operations are small and lack the economies of scale to compete efficiently with the large finishing lots. However, the trend toward pre-conditioning of cattle in small lots is done before placing them in large finishing lots. B.C. feeders may want to focus on the pre-conditioning and backgrounding of feeders, thus adding value in B.C. and developing a strong niche for good performing feeders when sold to the large feedlots for finishing. Some B.C. feedlots will finish cattle for local slaughter but this will be a limited growth potential.

5. *Packing*

a) North America

The beef packing industry of North America really consists of two groups differentiated by the type of cattle slaughtered, fed or non-fed. The dominant group slaughters primarily fed cattle, which account for about 77.3% of all beef, and is concentrated near the feedlots in the 13 leading cattle feeding states of the U.S. (see Figure III-7) and in the province of Alberta near the two largest packing plants of the country. The principal packing plants in the North West that remain and geographic location are set out on Figure III-8.

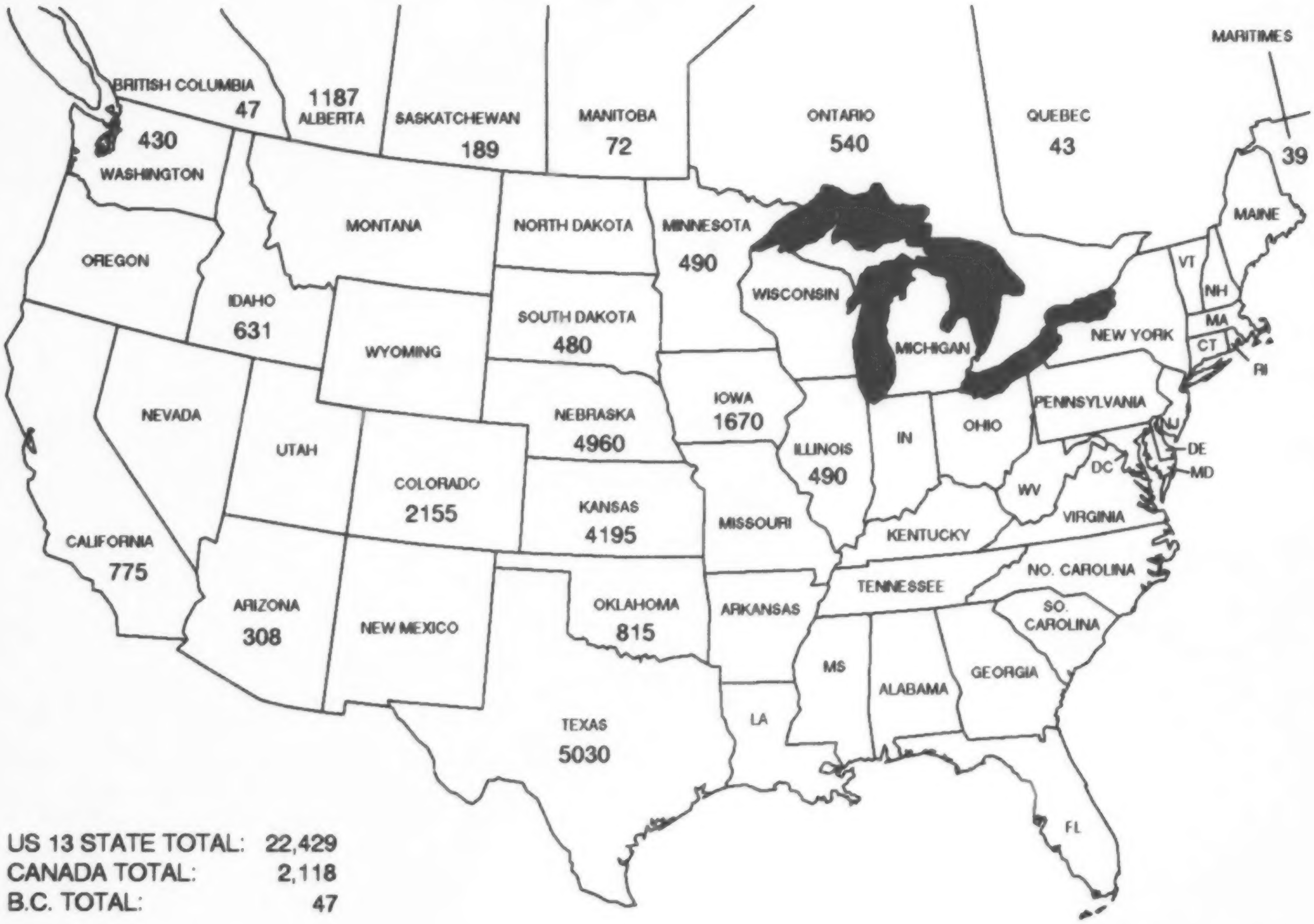
Table III – 3A:
Number of British Columbia Feedlots, October 1, 1991

Number of Head	Number of Feedlots	Percent of Cattle
Under 500	60	26.7
500 - 999	14	
Over 1,000	24	73.3
TOTAL	98	100.0

Note - 20 of the TOTAL are backgrounding operations.

Source: BC Ministry of Agriculture & Fisheries Brand Inspection & Regulatory Services

Figure III-7
Fed Cattle Marketed by Province and U.S. 13 Leading States
October, 1990 Through September, 1991 (000's)

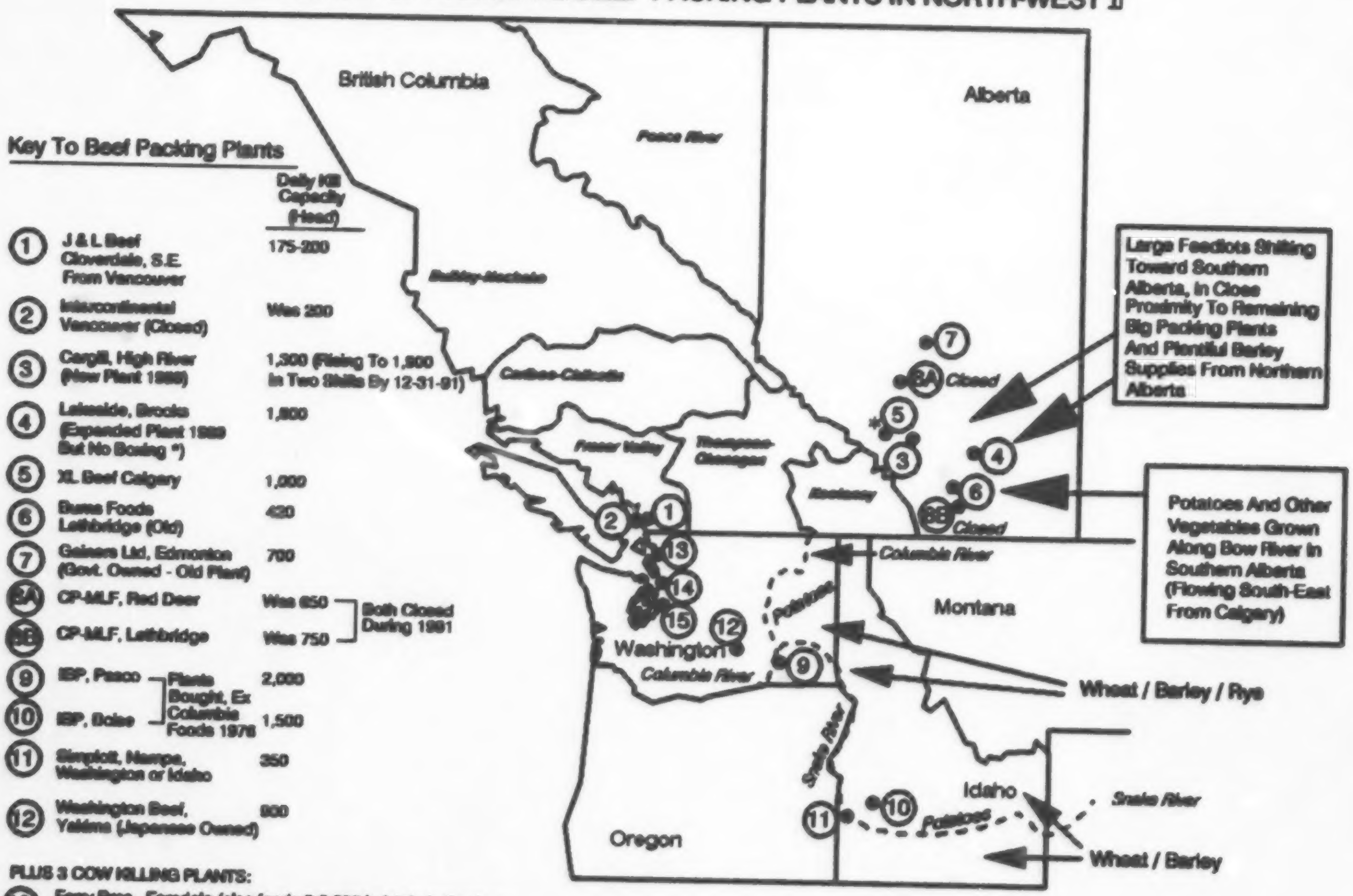

BRITISH COLUMBIA
47
1187
ALBERTA
SASKATCHEWAN
189
MANITOBA
72
ONTARIO
540
QUEBEC
43
MARITIMES
39
430
WASHINGTON
OREGON
IDAHO
631
MONTANA
NORTH DAKOTA
MINNESOTA
490
WISCONSIN
MICHIGAN
NEW YORK
VT
NH
MAINE
MA
CT
RI
WYOMING
SOUTH DAKOTA
480
NEVADA
UTAH
NEBRASKA
4960
IOWA
1670
ILLINOIS
490
IN
OHIO
PENNSYLVANIA
NJ
DE
MD
DC
WV
VIRGINIA
CALIFORNIA
775
COLORADO
2155
KANSAS
4195
MISSOURI
KENTUCKY
NO. CAROLINA
TENNESSEE
ARIZONA
308
NEW MEXICO
OKLAHOMA
815
ARKANSAS
SO. CAROLINA
MS
ALABAMA
GEORGIA
LA
TEXAS
5030
FL

US 13 STATE TOTAL: 22,429
CANADA TOTAL: 2,118
B.C. TOTAL: 47

Source: AG CANADA, USDA

Figure III-8

LOCATION OF PRINCIPAL BEEF PACKING PLANTS IN NORTH-WEST 1/



British Columbia
Alberta
Peace River
Bulkley-Nechako
Cariboo-Chilcotin
Fraser Valley
Thompson-Okanagan
Kootenay
Montana
Washington
Oregon
Idaho
Columbia River
Columbia River
Snake River
Snake River
Potatoes
Potatoes
Closed
Closed
1
2
3
4
5
6
7
8A
8B
9
10
11
12
13
14
15
*
Large Feedlots Shifting Toward Southern Alberta, In Close Proximity To Remaining Big Packing Plants And Plentiful Barley Supplies From Northern Alberta
Potatoes And Other Vegetables Grown Along Bow River In Southern Alberta (Flowing South-East From Calgary)
Wheat / Barley / Rye
Wheat / Barley

Key To Beef Packing Plants

	Plant	Daily Kill Capacity (Head)
①	J & L Beef Cloverdale, S.E. From Vancouver	175-200
②	Intercontinental Vancouver (Closed)	Was 200
③	Cargill, High River (New Plant 1989)	1,300 (Rising To 1,800 In Two Shifts By 12-31-91)
④	Lakeside, Brooks (Expanded Plant 1989 But No Boxing *)	1,800
⑤	XL Beef Calgary	1,000
⑥	Burns Foods Lethbridge (Old)	420
⑦	Gainers Ltd, Edmonton (Govt. Owned - Old Plant)	700
8A	CP-MLF, Red Deer	Was 650 — Both Closed During 1991
8B	CP-MLF, Lethbridge	Was 750 — Both Closed During 1991
⑨	IBP, Pasco — Plants Bought, Ex Columbia Foods 1976	2,000
⑩	IBP, Boise — Plants Bought, Ex Columbia Foods 1976	1,500
⑪	Simplot, Nampa, Washington or Idaho	350
⑫	Washington Beef, Yakima (Japanese Owned)	900

PLUS 3 COW KILLING PLANTS:

⑬ Ferry Bros., Ferndale (also feeds 2-3,000 holstein bull calves to 600-lb veal weight in central Washington feedlot-fabricates in California)

⑭ Schenk Packing, Stanwood (newest-looking; has hub grinding operation)

⑮ G. & G. Meats, Snohomish (least impressive; neighbor complained of smell)

* Lucerne Foods Ltd., Calgary, is a major beef fabrication/pre-packaging plant servicing Western Canada

1/ Mainly Fed Cattle, Except Nos. 13, 14, 15 Keyed Below

In addition, the packing industry has experienced substantial consolidation over the past decade. In the U.S. in 1977, there were 210 slaughter facilities with over 50,000 head annual capacity. In 1988 there were 110 slaughter facilities in this category (see Figure III-9). These 110 facilities slaughtered 95% of the animals (see Figure III-10). Presently the top four firms in the U.S. slaughter segment now control 70% of the market as opposed to 36% in 1980 (see Figure III-11).

Canada's beef slaughter has also become more concentrated. In 1980 the top four firms operated 18 slaughter facilities and controlled 78% of the country's slaughter (see Figure III-11 and Table III-4). The top firm, Canada Packers accounted for 41% of the slaughter. In the same year the top 8 firms operated 23 plants and did 90.5% of the slaughter. By the end of 1991 the top four firms (different firms) controlled 4 plants that slaughter 60% of the country's slaughter. The top firm (Cargill) operated one plant and controlled 21% of the countries slaughter. By year end 1991 the top eight firms slaughtered 84% of the cattle in 8.5 plants.

Therefore, while the number of firms has not significantly changed, the number of plants has declined measurably and the industry has become much more concentrated. This is important if Canada is to remain competitive in North America as a slaughter/processor of beef. To be competitive, slaughter and processing businesses require a near at hand steady supply of slaughter cattle equal to, or exceeding their year-round slaughter and process capacity. A rule of thumb in today's North American beef industry is that annual access to a minimum of one million high quality slaughter cattle within a radius of less than 200 miles (320 km) is a necessary supply base for a high capacity slaughter and process operation.

Figure III-9

NUMBER OF SLAUGHTER PLANTS

> 50,000 HEAD SLAUGHTERED ANNUALLY

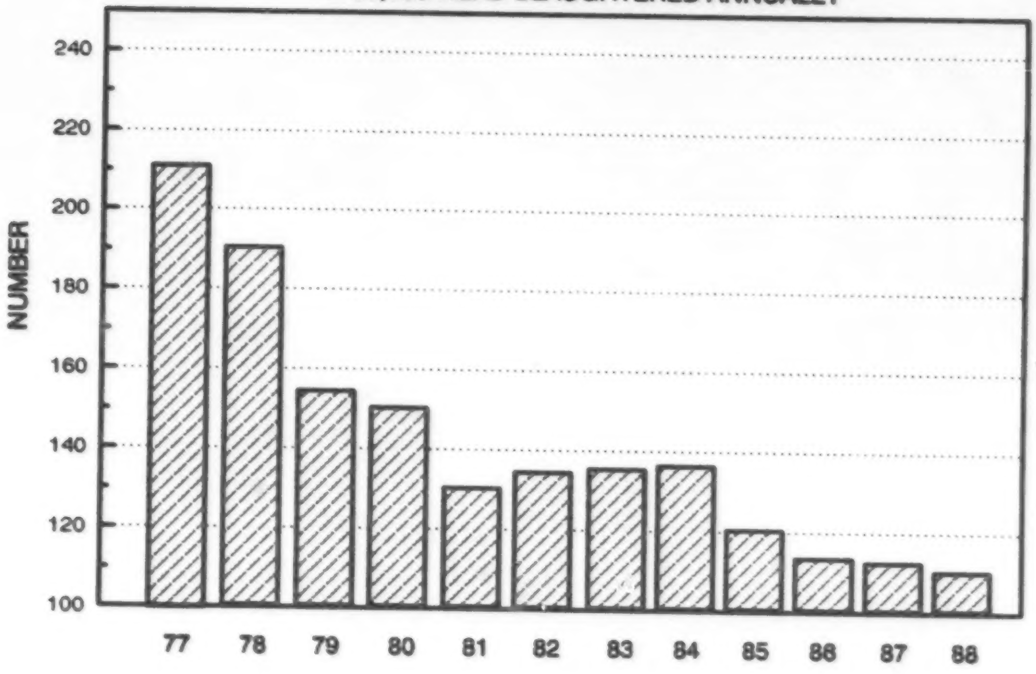


Figure III-10

PERCENT OF COMMERCIAL SLAUGHTER

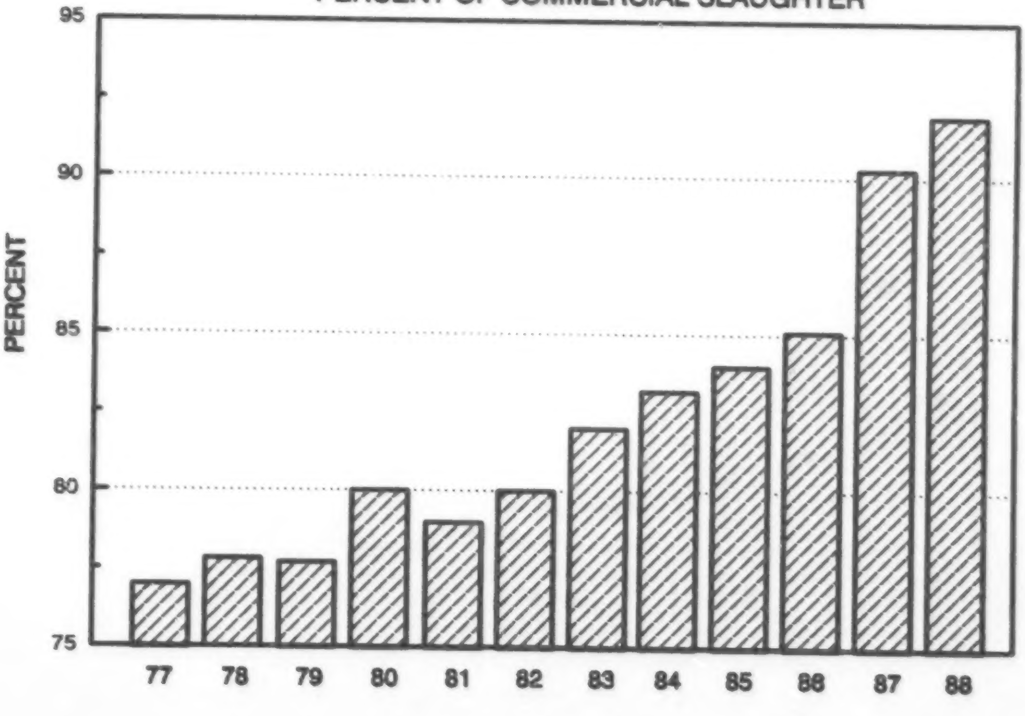
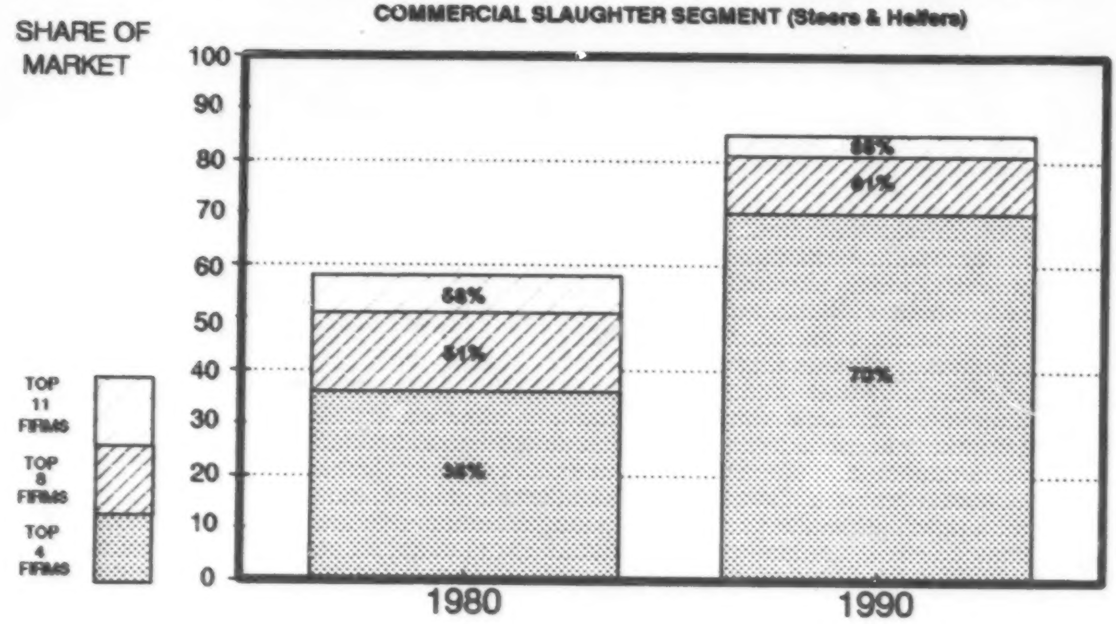


Figure III-11

U.S. CONSOLIDATION IN THE BEEF INDUSTRY

COMMERCIAL SLAUGHTER SEGMENT (Steers & Heifers)



CANADIAN CONSOLIDATION IN THE BEEF INDUSTRY

COMMERCIAL SLAUGHTER SEGMENT (Steers & Heifers)

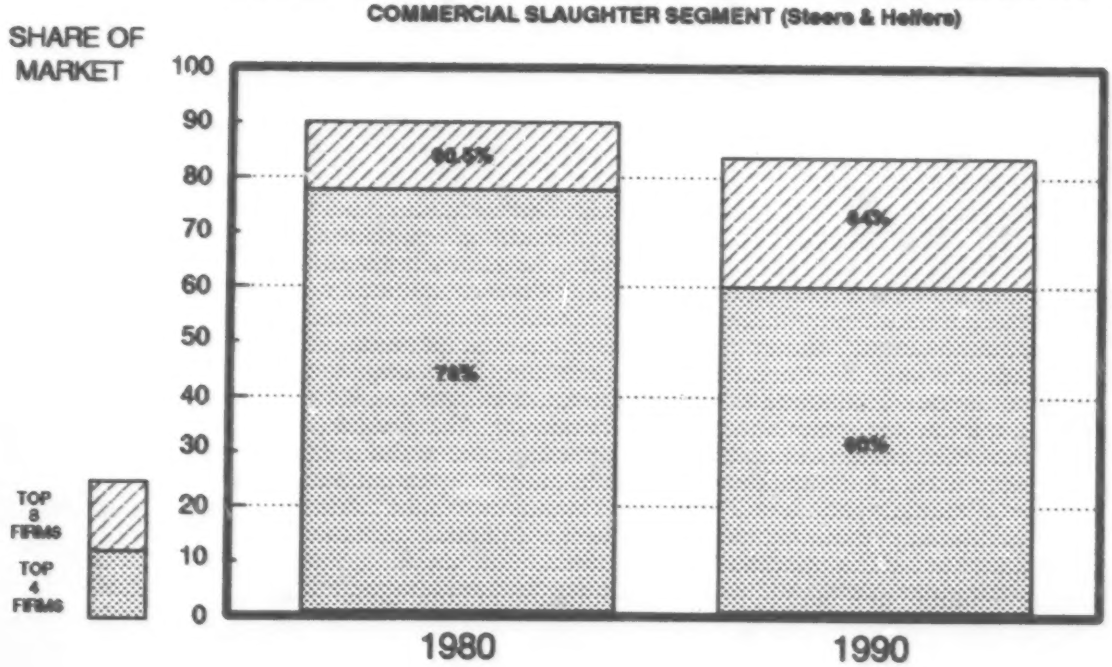


TABLE III-4:
ESTIMATE OF RANKINGS OF CATTLE SLAUGHTER OPERATIONS IN CANADA, (Excludes Calves)

Participating Slaughter Operations	No. of Kill Plants Operated Nationwide			Approx. Annual Slaughter Capacity-'000 of Head (Capacity Not Actual Kills)		
	1980	Early 1991	End 1991	1980 Estimate (% Of Total)	Early 1991	End 1991 (% Of Total)
Canada Packers (Now Maple Leaf Foods)	9	3	Nil	1100 (41)	500 (19)	Nil (-)
Swift Canadian (Later Acquired By Gainers)	2			300 (11)		
Gainers, Edmonton	1	1	1	100 (4)	120 (5)	120 (5)
Burns Meats (Now Burns Foods)	6 (Incl. 2 of CDM Subsid.)	1 1/2 (Few Killed Plant)	1 1/2 At Manitoba	500 (19)	115 (4)	115 (5)
J.M. Schneider (Manitoba Pork Only)	1	Nil	Nil	200 (7.5) (Some Cows & Steers)	Nil (-)	Nil (1)
Intercontinental	2	1	1	100 (4)	50 (2)	280 (12)
Cargill	Nil	1	1	Nil (-)	350 (14)	500 (21)
Lakeside	1	1	1	100 (4)	400 (16)	400 (17)
XL	1	1	1	100 (4)	150 (6)	150 (6)
Better Beef (Former Canadian Abattoir)	1	1	1	80 (3)	200 (8)	250 (10)
Mullers Meats (Cows Only)	1	1	1	70 (2.5)	180 (7)	180 (8)
Total Annual Slaughter ('000 Head) Under Federal Inspection				2650 (100)	2587 (100)	2406 (100) Est.
% Of Total Capacity Of Top 4 Firms (To Kill)				78.0%	57%	60%
% Of Total Capacity Of Top 8 Firms (To Kill)				90.5%	80%	84%

Source: Graeme Goodsir Assoc.

Loans and subsidies paid by the Alberta government to certain meat packers have accelerated concentration through closure of other packing plants across Canada (including B.C.) while also indirectly subsidizing prices paid for cattle.

The top fed beef packers in 1991 in North America are:

1. IBP (estimated 24.4% share)
2. ConAgra (estimated 15.95% share)
3. Excel (Cargill & Canadian Leader) (estimated 14.5% share)
4. National (estimated 3.6% share)
5. Beef America (estimated 3.4% share)
6. Packerland/Peck (estimated 2.5% share)
7. Gibbons (estimated 2.18% share)
8. Morrell (estimated 1.8% share)
9. Hiplains (estimated > 1.0% share)
10. Rosen's (estimated < 1.0% share)

b) **Canada**

The leading firms are Cargill, Inc. and Lakeside Packers. Cargill is foreign-owned (U.S.) and Lakeside is partly foreign-owned (Japan). The trend to consolidate in the beef and pork packing industries has been similar to the other countries, but occurred somewhat later (after 1988) and was activated by unusual circumstances of abrupt structural changes. A few observations follow:

- Cargill, Inc. (the U.S. private grain-oriented organization, which had entered the U.S. meat packing industry in the late 1970s as Excel Corporation and rapidly acquired No. 3 position behind IBP and ConAgra) embarked on international expansion. Cargill has recently acquired interests in meat operations in Australia and Mexico. In the case of Canada, Cargill (as the first U.S. company ever to invest significantly in the Canadian meat industry) saw entry opportunity existing because:
    - Most Canadian meat packing plants were aging, with owners apparently reluctant to innovate. Since 1980, at least five large but aging packing plants had been closed in Alberta, Manitoba, and Ontario without being replaced; but over capacity still existed.
    - It seemed possible to force some operators to exit the industry under competitive pressure, and thereby make way for Cargill to become a major player in the Canadian industry (this has been accomplished by Cargill).

- Under the U.S./Canada Free Trade Agreement commencing in 1989, there were prospects of extending Cargill's U.S. meat operation strategy to the large cattle industry in Western Canada.

- The Alberta government created inducements for Cargill to build a large modern plant near Calgary with a substantial establishment grant.

Cargill opened this new beef packing plant at High River in mid 1989 with daily killing capacity of 1,300 cattle, and set out to win market share by paying premiums to buy cattle and by discounting its beef selling prices across Canada.

A direct consequence of this, during the ensuing 2 years, has been closure of 6 other Canadian beef packing operations: Alberta (3 Canada packers (CP) plants - Lethbridge, Calgary, Red Deer); British Columbia (1 plant - Intercontinental); Manitoba (1 plant - Burns) and Ontario (1 plant - Burns). The CP Plant in Moose Jaw, Saskatchewan, has been up for sale since early 1991 and was recently sold to Western Canadian Beef Packers Ltd. It became the seventh beef plant to be closed or sold since Cargill began operations.

As these plants abruptly exited the industry under pressure of excess capacity and heavy financial losses, Cargill quickly assumed a dominant role in Canada.

- Canada Packers, Inc. (CP): Since World War II this company, traditionally had been the dominant Canadian meat packer and had become the largest food company. CP innovated new technology in the 1960's and actively expanded internationally up until 1975. However, CP constantly lost money in beef packing operations from 1986 onwards and was; therefore, discouraged from making further investment in beef plants or technology.

  Between 1978 and 1987, it closed major aging meat packing plants in Edmonton, Winnipeg, Toronto, and Burlington, Ontario; it also withdrew from meat packing/processing operations in Australia, U.S., Germany and Mexico.

  In 1990, a 56% interest in CP was acquired by the U.K. company Hillsdown Holdings, through its Canadian grain-flour subsidiary Maple Leaf Mills; the company was re-named Maple Leaf Foods, Inc.

  Disenchantment with beef packing caused the new owner to put all (4) of the remaining beef packing plants up for sale. By early 1991, in absence of any interested buyers, two Alberta plants were closed (Calgary and Lethbridge); the third Alberta plant (Red Deer) was closed in September 1991, together with a fresh meat distributing center near Vancouver; the remaining beef plant at Moose Jaw, Saskatchewan was sold to Western Canadian Beef Packers Ltd. in November of 1991, completing the firms withdrawal from the troubled Canadian beef slaughter business.

  These actions have further consolidated the Canadian meat packing industry into fewer plants.

- Lakeside Packers (division of Lakeside Holdings Ltd.), Brooks, Alberta: After the exit of CP/Maple Leaf Foods, Inc. from the Canadian beef packing industry, Lakeside is temporarily the largest packer with a daily kill of 1,400 cattle, but with no boxing facilities. Ownership of Lakeside is vested in three Alberta families originating in cattle feeding, plus VenCap (Alberta Government) and Mitsubishi of Japan.

  Lakeside is expected to be overtaken as No. 1 when Cargill completes its expansion of daily kill to 1,900 head, but the two of them will be the dominant beef packers, concentrated solely at single plants in Alberta.

- Summary

  Therefore, 1991 finds the Canadian beef packing industry highly consolidated. It consists primarily of the two leaders--Cargill and Lakeside--and two smaller groups--XL Beef (also in Alberta, at Calgary), and Better Beef Ltd. in Guelph, Ontario. Each of the latter 2 can kill 800 head per day. Other more minor beef kill operations include J & L Beef, (near Vancouver, B.C.), Burns Foods (Lethbridge, Alberta), Gainers (Edmonton, Alberta - mainly cows - future questionable), Intercontinental (Saskatoon, Saskatchewan), Western Canadian Beef Packers Ltd. (Moose Jaw, Saskatchewan) and Muller Meats (Kitchener, Ontario - killing cows only). There are no significant cattle slaughter operations in Quebec or the Maritime provinces. In summary, the Canadian Beef packing sector will have consolidated to four larger plants and a few niche plants by end of 1991.

  The packing sector of B.C. has diminished in recent years to one principal beef packing plant (J & L Beef) and several small niche plants.

D. Industry Dynamics: Issues, and Driving Forces

Among the industry issues, and driving forces affecting the dynamics of the cattle industry in North America but particularly B.C., the following are principally responsible for changes and developments - past, present and future:

- Consolidation

- Integration

- Markets and Marketing

  - Beef
  - Feeder cattle
  - Finished cattle

- Grading/Inspection between U.S. and Canada

- Comparison of B.C. Beef Industry Competitiveness

  a) Cow-calf

  b) Backgrounding

  c) Finishing

  d) Slaughter/Processing

- Locational and Transportation Factors

  - Cattle
  - Feed
  - Beef

- Societal Factors
    - Environmental
    - Animal rights
    - Land (ALR, Crown Land)

1. *Consolidation*

As the analysis of the previous section of this report indicated the North American, Canadian, and B.C. beef industries have become more consolidated, particularly the slaughter/processing segment. The world industry has also been consolidating. Some examples follow:

During the past decade, a broad trend toward consolidation has accelerated world wide, driven by pressures to reduce costs and improve marketing. Some examples of this trend are documented for selected world beef producing countries, Canada and the U.S.:

i) Denmark (EEC member): Packers (several are farmer-owned coops) have consolidated into a few large groups. The reason cited was to reduce costs and improve marketing efficiency - especially for branded processed pork products marketed for export. The big Danish companies serve a broad based world market, but they are still struggling for profitability, as the EEC beef/pork markets are depressed and pork export to Japan is very slow.

ii) Ireland (EEC member): Over 50% of the Irish beef industry was amalgamated into one empire controlled by Larry Goodman. However this empire has gone bankrupt amid major political scandal overtones. Also, the bankruptcy was partly due to a bad debt that resulted from exports of EEC intervention beef to Iraq prior to the Gulf War. The Irish beef packing industry still remains highly concentrated, albeit shakily.

iii) New Zealand (NZ): This country dismantled all agricultural supports 6 years ago. Simultaneously with these adjustment pains, meat packers rationalized through consolidation of several old plants that had excess capacity problems. Buy-outs by the two major farmer co-op packers (AFFCO and Alliance) incurred large debt for both co-ops, aggravated by some costly operating losses. The outcome of this consolidation has been:

- Sixty five percent of New Zealand's beef slaughter/processing capacity is now owned by two organizations - AFFCO (main farmer co-op) and Weddel (part of privately owned Vestey U.K. organization). These organizations are reported to be under financial stress.
- A further 20% of the slaughter/processing industry is owned by two private New Zealand companies (one of them with farmer shareholders) on North Island.
- Many other old beef plants were closed, at large expense. Former companies and co-ops owning these plants went out of business.
- A number of small new private packing plants have emerged in niche roles under the shadow of the larger consolidated firms.

More recently, consolidation in the New Zealand meat industry has led the industry (like the Danes) to rationalize its beef export marketing system. A new Meat Council of leading export companies has been legally structured, with objectives of developing an alliance between them. The objectives include rights for one or more firms to service certain export markets without a competitive presence (or without price-cutting competition) from other firms in the Council. The effectiveness of this new alliance between key New Zealand beef export firms is so far unproven.

vi) Australia: A major restructuring of packers/processors has resulted in significant consolidation in the meat export industry during the 1980's. The first moves were take-over acquisitions initiated by two "high-flying" entrepreneurers whose leveraged buyouts became doomed by debt burdens and insolvency pressures:

- John Elliott (formerly head of Elders IXL, now re-named Fosters Brewing) acquired control of most export beef packing plants in the northern half of Australia. He set them up in a group called AMH Holdings. Fifty-two and a half percent of AMH was later sold to the large U.S. Agribusiness firm, ConAgra.

- John Spalvins (head of Adelaide Steamship group) acquired leveraged control of the Metro group which had 12 meat packing (and other) plants located mainly in southern Australia. Metro was then the largest packing company, but heavily oriented to sheep meat and live sheep exports, as well as beef. Last year, the large U.S. firm, Excel (a beef/pork organization) bought one beef plant from Metro in an effort to establish a foothold in Australia; some other Metro plants have been closed periodically. Adelaide Steamship - Metro is having serious financial difficulty.

- There are two other foreign-owned beef packers, that together with the above two groups, make up the big four in Australia now:

- William Angliss (part of Vestey U.K. - Weddel NZ Group a wealthy U.K. family business with worldwide cattle ranching/packing/cold store/fish and shipping transport - property interests, but lately incurring financial strains due to excessive debt. Angliss Vestey was a pioneer packer - rancher - in Australia's industry; was number one packer after World War II and now is number 3).

- Nippon Meats (Japan) has become number four packer (large feedlot investor) since mid 1980s, mainly in acquisition. It owns four export beef packing plants.

Thus, Australia now has a "Big 4" group of meat packers which have become foreign-owned to a large extent.

As indicated in Section III-C-4 of this report, further consolidation can occur in the finishing segment and is likely to occur as the remaining packers struggle to establish ways to control a stable supply of finished cattle. As large slaughter/processing operations with excess capacity compete for a limited supply of finished cattle, they may take control (through ownership or contracting) of more owned finishing operations thus consolidating the segment further.

Discussion of consolidation in the cow-calf and backgrounding segments was discussed in Sections III-C-2 and III-C-3 of this report respectively. Consolidation in backgrounding will follow closely what happens in the finishing segment. Cow-calf operations will continue to consolidate, but the number of operators in this segment will continue to be large and no single player will dominate or wield market power.

2. *Integration*

Integration is noteworthy because of its almost total absence in the beef industry of the U.S., Canada, and B.C. The area that seems to have been integrated most, (in the U.S. and Canada) into other segments of the industry is backgrounding. And, if there is to be further integration or coordination of operations in the beef business, to control more of the system from breeder to retail, it is likely to start with greater control between the finishing yard and the slaughterer.

An analysis of integration developments and competitive positions of competing industries such as poultry and pork is of interest in assessing integration in the beef industry. It shows what has been done in other meat sectors as producers and processors have been forced to reduce costs, improve products and survive in very competitive businesses.

Large steady numbers of cattle are required in order for packers and feedlots to have competitive unit costs. With 25 to 35 percent excess capacity in the slaughter/processing sector now in the U.S. and Canada, it contributes to an intense scramble for cattle. Major reasons for slaughter/processor feeding, contracting and formula pricing arrangements (integration by ownership and/or by contracting) is to ensure supplies of cattle and quality.

Monfort of Colorado has been the most successful of the participants that have attempted to integrate feeding and slaughter/processing. Monfort is the only large feeder to own a major percentage of the cattle in its lots. It is likely that if integration comes to ensure supplies and quality of cattle, it will be done via contracts because it is unlikely that capital requirements would permit extensive ownership based integration.

As mentioned, high capital requirements is a barrier to expanded integration at the feeder, slaughter/processor level. With feeder steers (600 pounds) costing approximately $400 each and each requiring over $200 in feed and services, the capital required to put 100,000 head on feed at one time is in the range of $60 million. There is considerable risk in feeding cattle and even a firm as skilled in risk management as Cargill has thus far not opted to take the plunge.

The other part of the equation is that 100,000 head on feed would satisfy less than one-twelfth the capacity of IBP's Finney County, Kansas, plant. Therefore, to completely control cattle required and figuring 2.5 cycles per year per feedyard, the working capital commitments involved could be in excess of $280 million. Packers do occasionally custom feed cattle in lots owned by others, but usually the numbers are not significant and the cattle are kept for use as emergency fill-in to keep a plant operating close to capacity.

Some social and legal considerations also inhibit feeding by packers. The older packers, like Swift, are prevented by Consent Decree from feeding and there are strong sentiments among feeders against the practice. IBP tried at one time to set up contractual agreements with specific feedyards, but ran into strong opposition and succeeded only in a few local situations. Cargill owns both feedyards and packing plants, but they are geographically spread and cannot be compared to the integration in the broiler industry. It must also be remembered that about 90% of the cattle fed by Cargill are owned by other people and, thus, there is no guarantee that they will be killed in an Excel plant.

If the capital requirements to integrate back into feeding are high, the funds required for cow-calf integration are even higher. Land costs alone can exceed $1,500-$2,000 per animal unit for an investment that is often marginal. If the slaughter/processing plant requires 1.2 million fed cattle per year, a herd of at least 1.3 million cows will be required to produce the calves. If it is assumed that land will be owned at $1,500 per animal unit an investment in the cow-calf operation could be as much as $1.95 billion. Thus, to control the entire system by ownership is extremely capital intensive.

Consequently, Sparks and KenAgra do not believe that calving to carcass integration is at all likely in the foreseeable future, but integration by packers to control a cattle inventory is likely. To accomplish this integration into backgrounding and/or finishing may occur.

Capital availability, risk aversion, efforts to reduce costs, needs for numbers of cattle, and increased need for a uniform, predictable product will increase pressures for packers to contractually align themselves with producers and feeders of the "right kind" of cattle (defined as those most likely to meet consumer demand). The residual cash market (cattle not contracted, formula priced, or packer owned) will become thinner, less representative of the total population, more volatile and some producers believe downward biased.

3. *Markets and Marketing*

a) *Introduction*

A major determinant of future direction of a business sector is its market and its outlook. In the case of the beef industry, whether in B.C. or elsewhere, the market breaks down into three important segments -- beef, feeder cattle, and finished cattle. By far the most important of these is the ultimate market for beef as it drives the need for the other markets.

b) *Beef Market*

i) Historical Consumption U.S and Canada

An overview of meat consumption is composed largely of the consumption of beef, broiler, pork, and turkey. There are additional meats which are a part of the total industry, such as lamb, rabbit, game hens and others, but are relatively insignificant and not included in this study. Fish and shellfish are not included either.

Total meat consumption in the U.S. in the four major meats has risen steadily so that annual per capita consumption is now about 207 lbs. (94 kg) on a retail weight basis (see Figure III-12).

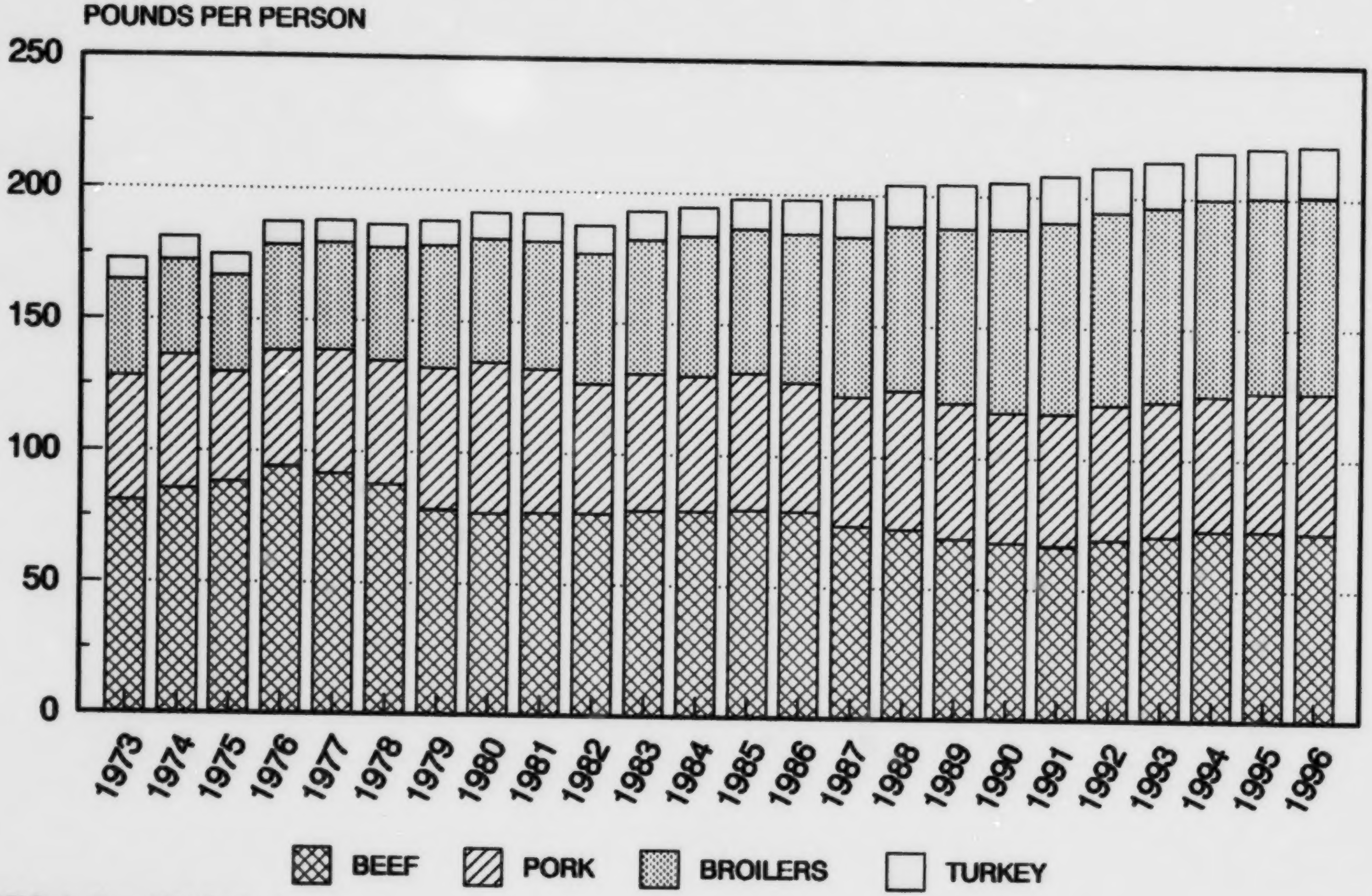
The most significant gains have occurred in the consumption of poultry, hitting new highs for the past fifteen years, rising from about 40 lbs. (18 kg) per capita in 1976 to about 75 lbs. (34 kg) per capita in 1991.

Poultry's gain has been primarily at the expense of beef, which has seen its per capita consumption drop about 30% since peaking in 1976, from 94.1 lbs. (43.7 kg) per capita in that year to 67.1 lbs. (30.4 kg) per capita in 1991 (see Figure III-12 and Appendix A, Table A3).

Pork, the other major "red" meat, has remained fairly stable during the last forty years, with per capita consumption ranging from extremes of 50 to 68 lbs. (23 to 31 kg), and seldom moving outside of the 55 to 65 lbs. (25 to 29.5 kg) per year range.

Figure III-12

US MEAT CONSUMPTION



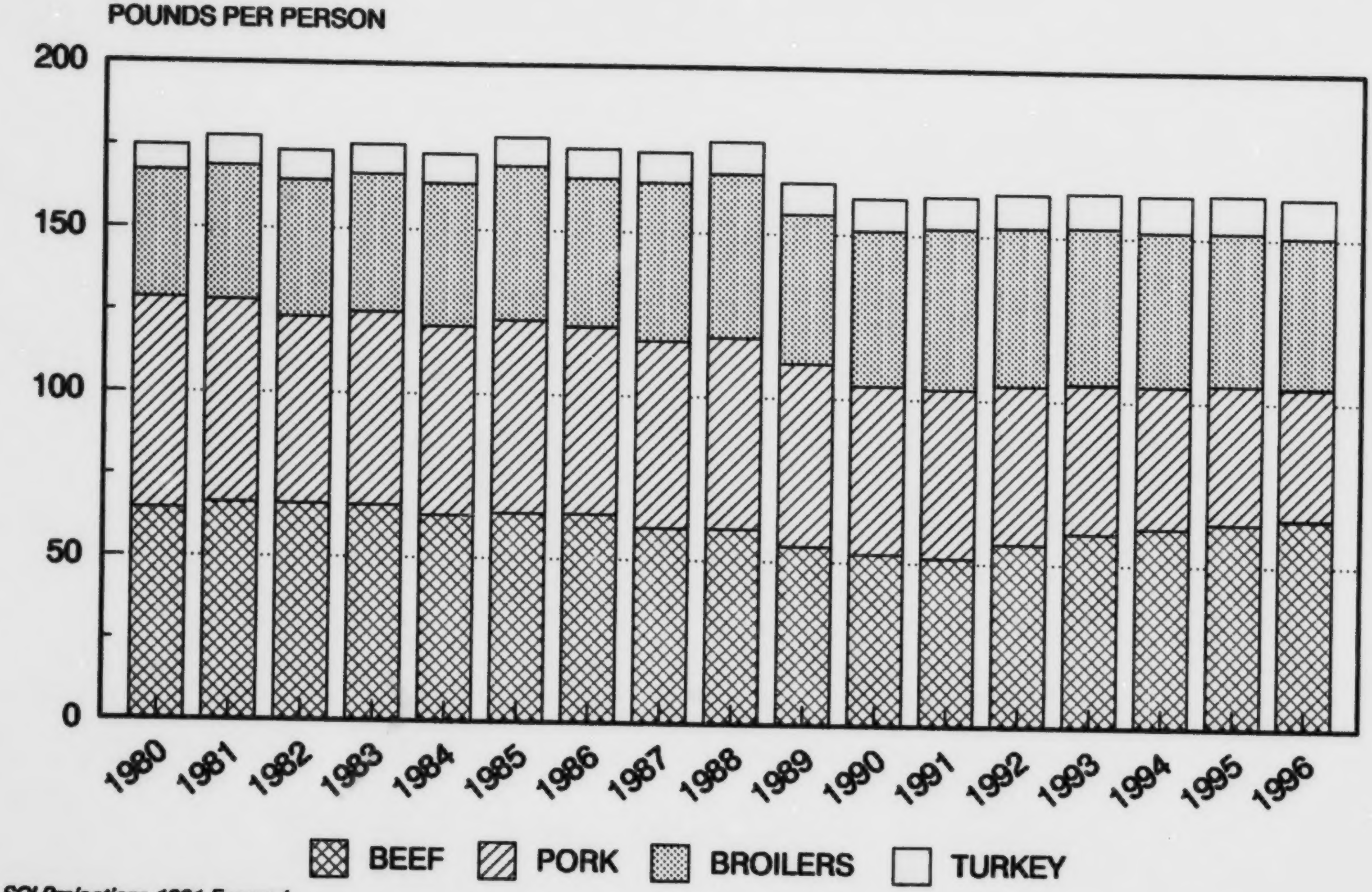
SCI Projections 1991 Forward

In Canada a similar development has occurred, but less dramatic. Total meat consumption in the four major meats rose steadily to an annual consumption of about 178 lbs. (81 kg) per capita in 1988. However, since that time it has declined and annual per capita consumption is now about 160 lbs. (73 kg) on a retail weight basis (see Figure III-13). In large part this decline is the result of declines in the consumption of beef and pork since chicken was increasing in consumption. Consumption is expected to remain flat through 1996 as increasing supplies of beef and poultry dampen domestic pork demand and lead to expanded exports of hogs and pork. Also, the higher Canadian prices for meat as a percent of income, in part a result of "supplying management of poultry, causes meat to be consumed less.

The most significant gains have occurred in the consumption of chicken, hitting new highs in recent years. It rose from about 30 lbs. (13.6 kg) per capita in 1970 to almost 51 lbs. (23 kg) per capita in 1991. However, because of imposed government controls on chicken, consumption has not grown as it has in the U.S. and has remained relatively constant at 49 to 51 lbs. (22 to 23 kg) per capita in recent years; well below U.S. consumption in 1991 of 75 lbs. (34 kg) per capita.

Poultry's gain has been primarily at the expense of beef, which has seen its per capita consumption drop about 36%; from 81 lbs. (36.7 kg) per capita in 1976 (peak year) to 51.6 lbs. (23.4 kg) per capita in 1991 (see Figure III-13 and Appendix A, Table A6). Canadian beef consumption trends have patterned those of the U.S. The peak year for beef consumption in both countries was 1976 and since that time the decline in both countries has been similar.

Figure III-13
CANADA MEAT CONSUMPTION



SCI Projections 1991 Forward

Canadian pork consumption has remained fairly stable over the years, with per capita consumption ranging between 55 to 60 lbs. (25 to 27 kg) per capita. In recent years it has declined and it is near its lowest per capita consumption level.

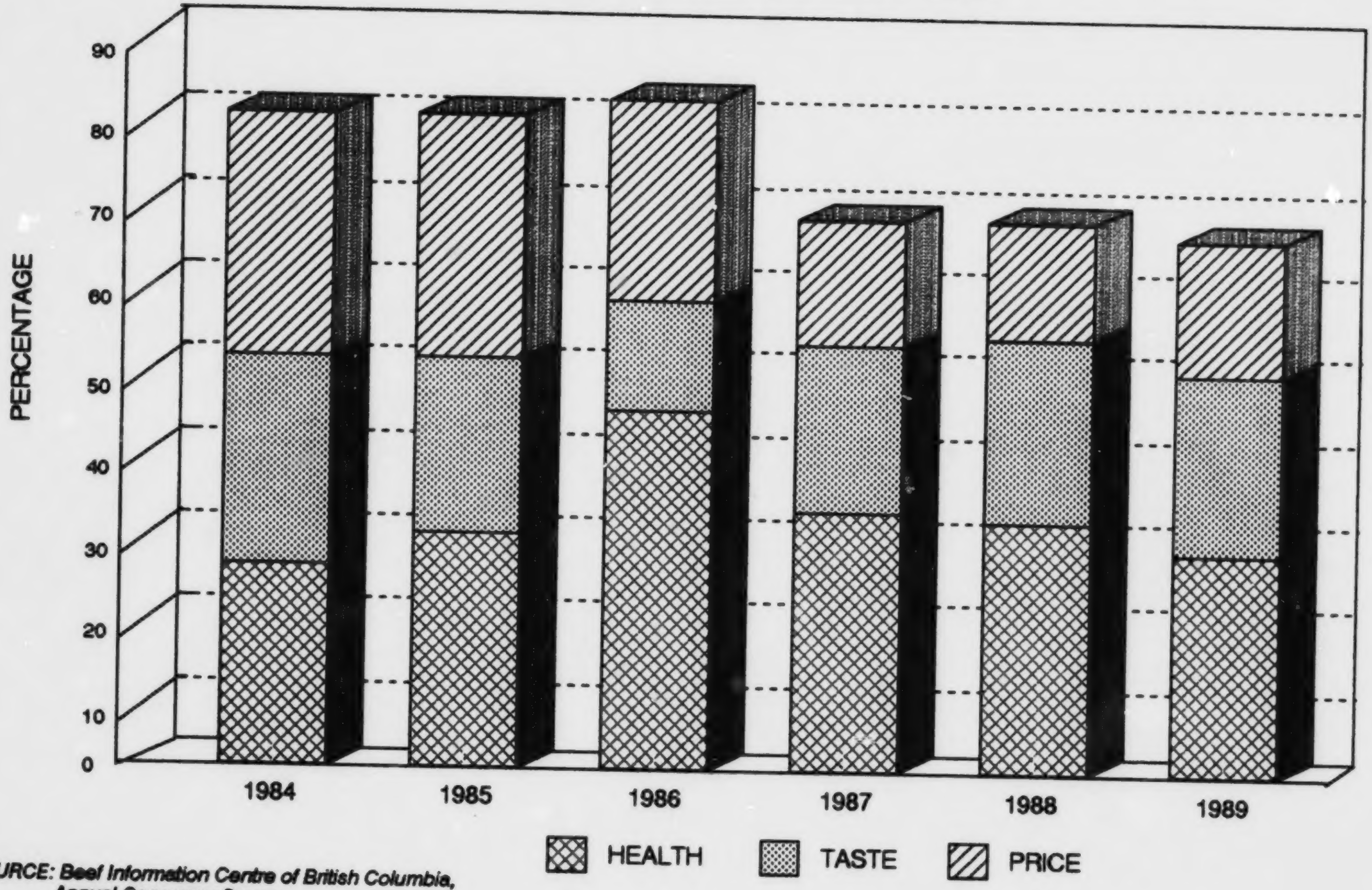
Examination of consumption of the four major meats, and particularly beef in B.C., as was done by Equus and reviewed by our team, results in the same trends, as regards consumption, as found in all of Canada and the U.S.

Poultry's growth, beef's decline and pork's stagnating consumption numbers represent the dynamics of a changing meat industry and a shift in consumer eating habits. Our supply/demand work at Sparks supports the findings of the Beef Information Centre (BIC) annual consumer survey (see Figure III-14).

Over the last 10 years, poultry's advance has been more than a result of the health, taste, and price advantages of poultry. It has also benefitted from structural changes in how the poultry sector markets its products and generates efficiencies of scale that result in lower cost and better product which affords great value and convenience to the consumer. These efforts on the part of the poultry industry have helped broiler products become the primary beneficiary of the evolving trend towards convenience foods, whether bought through traditional retail channels or through the HRI trade.

Figure III-14

PRINCIPAL REASONS FOR SERVING FEWER MEALS WITH BEEF VIS A VIS THE PREVIOUS YEAR



SOURCE: Beef Information Centre of British Columbia, Annual Consumer Survey

Health concerns, taste, and price are the highest ranked factors that determine the consumption of beef. Health is key, but the industry has started to produce for a leaner animal and has convinced consumers that beef can be an acceptable protein source. Therefore, taste and price seem to be regaining influence as the principal factors affecting the consumption of beef. In fact, Sparks analysts believe that the downward trend that took place in the U.S. and Canada in the late 70's has leveled off and may even rise slightly in the next few years.

ii) *Value*

Beef is the major component of the meat industry in terms of value in the U.S. and Canada (see Table III-5). Beef in the U.S. yielded a value at retail in 1980 and 1990 of $US40.8 and $US47.3 billion respectively. This is compared to $US8.1 and $US16.4 billion in the same respective years for broilers. This indicates that while beef still leads in value, broiler, pork, and turkey are growing at a faster rate.

The same basic trend exists in Canada (see Table III-5). Beef in Canada is estimated to have had a retail value in 1980 of $US4.02 billion and by 1990 it had grown to $US4.18 billion (stagnant). This is compared to chicken which in 1980 and 1990 had a retail value of $US1.11 billion and $US2.10 billion respectively.

Table III-5

Estimated Retail Value of Key Meat Types in U.S. and Canada, 1980 & 1990

Meat Type	U.S. 1980	U.S. 1990	Canada 1980	Canada 1990
Beef	40.8	47.3	4.02	4.18
Poultry	8.1	16.4	1.11	2.10
Pork	22.1	32.0	3.04	3.46
Turkey	2.1	4.6	.25	.49

$US in Billions.
Sparks Companies, Inc. Estimates.

Beef yields the highest price per pound for its products. In Table III-6 the average retail prices of selected meat products sold in the U.S. and Canada are partially presented for the years 1980 through 1989. It presents an average value for Beef (Choice Grades) cuts, fresh pork cuts and poultry. It also shows a price trend for the key red meat and poultry products.

Table III-6

U.S. and Canada Average Retail Meat Prices

ITEM	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Beef (Choice Grade)	**$2.35**	**$2.38**	**$2.34**	**$2.36**	**$2.29**	**$2.27**	**$2.38**	**$2.50**	**$2.66**	**$2.81**
Sirloin Steak	2.99	3.06	3.06	3.08	2.96	2.96	3.13	3.29	3.58	3.67
Round Steak	2.86	2.95	2.90	2.91	2.77	2.77	2.89	2.99	3.12	3.32
Round Roast	2.63	2.64	2.55	2.58	2.47	2.44	2.53	2.63	2.76	2.93
Rib Roast	3.03	3.22	3.24	3.35	3.28	3.26	3.54	3.89	4.17	4.49
Chuck Roast	1.82	1.79	1.74	1.68	1.57	1.59	1.68	1.73	1.88	2.09
Ground Chuck	1.80	1.78	1.73	1.72	1.68	1.64	1.71	1.76	1.83	1.97
Fresh Pork	1.52	1.75	1.70	1.62	1.62	1.78	1.88	1.83	1.83	2.13
Pork Chops	2.13	2.39	2.37	2.38	2.34	2.59	2.82	2.77	2.85	3.27
Sliced Bacon	1.67	2.05	1.94	1.86	1.94	2.08	2.14	1.88	1.77	2.13
Smoked Picnic	1.04	1.15	1.05	1.01	1.02	1.06	1.12	1.12	1.10	1.28
Canned Ham	2.46	2.65	2.67	2.56	2.56	2.68	2.80	2.73	2.67	2.77
Fr. Pork Sausage	1.61	1.88	1.87	1.71	1.74	1.91	1.99	1.97	2.00	2.35
Frankfurters	1.77	1.82	1.81	1.80	1.81	1.93	1.99	2.02	2.06	2.29
Bologna	2.11	2.21	2.18	2.13	2.11	2.17	2.19	2.24	2.28	2.51
Poultry										
Whole Broilers	.74	.72	.73	.81	.76	.84	.78	.85	.93	.90
Fz. Hen Turkeys	.98	.93	.92	.99	1.05	1.07	1.01	.96	.99	.99
Canada (Wt'ed. City Avg.)										
Beef							2.65	2.81	2.99	
Sirloin Steak			3.45	3.46	3.17	3.28	3.73	4.10	4.36	4.40
Round Steak			2.79	3.13	2.79	3.02	3.50	3.75	3.98	4.25
Prime Rib Roast			2.72	3.28	3.09	2.98	3.29	3.98	3.88	3.93
Blade Roast, (out)			1.72	1.89	1.83	1.75	2.20	2.37	2.68	3.03
Blade Roast, (in)			1.58	1.60	1.48	1.70	2.18	2.35	2.58	2.59
Stewing Beef			2.03	1.98	1.83	1.90	2.12	2.35	2.47	2.61
Hamburger			1.32	1.18	1.08	1.08	1.18	1.28	1.36	1.48
Pork							2.10	2.30	2.55	
Pork, Ctr. Cut Chops . .			2.46	2.39	2.18	2.71	2.93	2.95	3.13	3.37
Pork, Boston Butt			1.30	1.36	1.15	1.49	1.65	1.38	1.51	1.77
Pork, Bnls. Butt Roast .			1.60	1.70	1.41	1.98	2.05	2.13	2.14	2.39
Bacon			2.13	2.21	2.11	3.01	2.74	2.56	2.45	2.88
Wieners			1.70	1.78	1.61	1.65	1.84	2.02	2.16	2.38
Chicken			1.32	1.22	1.03	1.25	1.24	1.49	1.63	1.71

$US/lb.

Sources: U.S. Department of Labor, Bureau of Labor Statistics, Statistics Canada

Retail prices for Canada are set out for selected recent years at the bottom of Table III-6. It shows that beef, pork and poultry are all higher priced, when adjusted to a $US basis, than prices for the same products in the U.S.

Based on store visits made by the consultants team in B.C. retail prices in B.C. were found to have a similar relationship to those of the rest of Canada, and the U.S.

iii) *Regional Distribution*

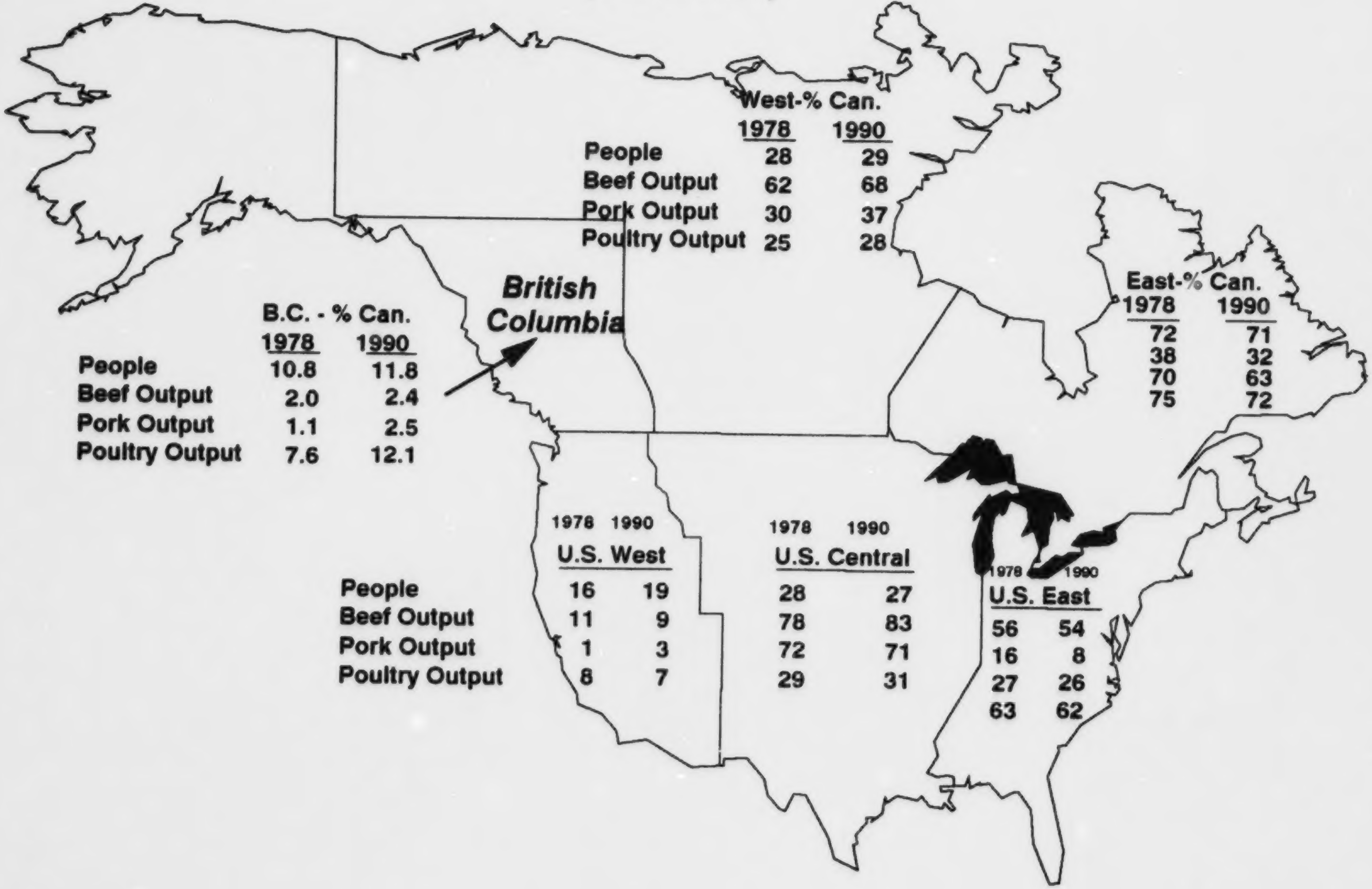
On a regional basis, the relationships between the U.S. population and its output of beef, pork and poultry can be seen in Figure III-15. The Central Region of the U.S. is the largest producer of beef and pork, in absolute terms, and far exceeds its consumption needs. The Eastern Region contains the majority of the population but is a deficit producer in red meats, although its production of poultry constitutes almost all of the nation's output. The Western Region is a net "importer" of all three meats.

The information presented in Figure III-15 indicates that over the period from 1978 to 1990, population percentages have remained the same in each major region of the U.S. However, beef production has declined significantly in the eastern U.S., and slightly in the west. Consequently the central U.S. has increased its share of total U.S. beef production. On the other hand, pork and poultry production experienced no major shifts between regions during the same time period.

Figure III-15

REGIONAL DISTRIBUTION OF PEOPLE, RED MEATS, AND POULTRY

(1978-1990)



B.C. - % Can.	1978	1990
People	10.8	11.8
Beef Output	2.0	2.4
Pork Output	1.1	2.5
Poultry Output	7.6	12.1

West-% Can.	1978	1990
People	28	29
Beef Output	62	68
Pork Output	30	37
Poultry Output	25	28

East-% Can.	1978	1990
People	72	71
Beef Output	38	32
Pork Output	70	63
Poultry Output	75	72

	U.S. West 1978	U.S. West 1990	U.S. Central 1978	U.S. Central 1990	U.S. East 1978	U.S. East 1990
People	16	19	28	27	56	54
Beef Output	11	9	78	83	16	8
Pork Output	1	3	72	71	27	26
Poultry Output	8	7	29	31	63	62

Also included in Figure III-15 is the relationship between Western and Eastern Canadian provinces. In addition, the change in percentages between 1978 and 1990 can be seen. In every category - people, beef output, pork output, and poultry output - there has been an increase in the Western provinces' percentage of Canada's total.

Western Canada surplus meat production is primarily attributed to the other three Western provinces, not B.C. Data for B.C. also set out in Figure III-15, show that B.C. is a deficit meat supply area in all but poultry. It is estimated that beef supply's from B.C. sources account for 25-30% of total consumption.

Surplus Canadian meat production, as in the U.S., has traditionally moved East and West from the central regions. In recent years; however, this traditional flow began to change as a result of changes in rail rate charges and implementation of the free trade agreement between the U.S. and Canada. Recently, more cattle and meat have moved south into the U.S. from Western Canada, and meat from the central U.S. has moved into Eastern Canada.

Up to this point, trade flows of beef products have not been significant across the Western border regions of the U.S. and Canada. There is however, future potential for trade along the Pacific Coast by the two countries particularly between the provinces of B.C., Alberta, and the states of Washington and California. The fact that the Pacific U.S. states and B.C. are net importers of beef provides an opportunity for efficient producers and processors.

vi) *Projected Consumption*

Through 1996, Sparks Companies Inc. analysts expect that poultry will continue to maintain a competitive position relative to beef, particularly in the U.S. (see Figure III-12), but also in Canada (see Figure III-13).

However, while poultry is expected to continue to gain market in the U.S., beef is expected to have reached bottom. In the U.S. by 1996, broiler consumption is projected to rise to about 78 lbs. (35.4 kg) per capita, and beef to 72 lbs. (32.7 kg) per capita.

During the same period, however, it is estimated that broiler consumption will remain at present levels, and that Canadian beef consumption will rise from 51 to about 63 lbs. (23 to about 29 kg) per capita. This increase is expected, largely because governments poultry supply management program limits the growth of broiler production; thus, permitting beef to gain a greater share of the market. Also, beef production is expected to expand (from 2.1 to 2.75 million lbs. (0.95 to 1.25 million kg) in 1990 and 1996 respectively) and most will have to be consumed in Canada.

As the U.S./Canada Free Trade Agreement, G.A.T.T., and other trade and price factors change Canadian poultry supply management could come under pressure to be removed. If so it could encourage more chicken to be consumed. Sparks Companies, Inc. analyzed the impacts of such a change on meat consumption and their analysis expect the following impact on the poultry and beef sectors

(Analytical Summary in Appendix A, comparison of baseline projection (Appendix A, Tables A4 to A6) and poultry supply management reduction (Appendix A, Tables A7 to A9)).

Broilers:

- Canada broiler production declines at a rate of about 30,000 tonnes per year from 1993-1996 (see Appendix A, Tables A11).
- Broiler imports by Canada quadruple in 1992 and increase to ten times the 1991 level by 1996 (see Appendix A, Table A11).
- Broiler consumption increases in the supply management removal scenario by 20 percent over the 1992 and by 1996 period.
- Broiler prices drop 20 percent in 1992 and are 30 percent lower than baseline projections in 1996 (see Appendix A, Table A10).

Cattle/Beef:

- The price for choice cattle at the packing plant in Canada will fall 6 percent from baseline projections. Feeder cattle prices will drop 4 to 5 percent.
- Cattle (monthly feeders) exports double from baseline projections, (499,000 head (Appendix A, Table A4) to 742,000 head (Appendix A, Table A7) in 1993). By 1996 exports decline to 485,000 head

(Appendix A, Table A7), but are still well over what they are expected to be (249,000 head, Table A4) if poultry prices are kept stabilized.

- Total cattle slaughter drops 10 percent from baseline projections; holding near 3 million head in 1992 and rising to 3.4 million head in 1996. Steer and heifer slaughter account for all of the downward adjustment in kill levels. Cow kills are up minimally from baseline projections.

- Beef exports increase 4-5 percent from baseline levels.

- Beef consumption runs 56 to 57 lbs. per capita (10 percent below baseline projections of 63 lbs. per capita), but is still above the recent year's disappearance of 51 lbs. per capita.

Thus, consumption of chicken will rise (from 51 to 66 lbs. per capita) much faster than the consumption of beef (from 51 to 57 lbs. per capita) and result in consumption patterns very similar to those in the U.S.

Cattlemen have responded to the challenge from the poultry industry by altering beef grading standards in favour of leaner carcasses and by changing the type of cattle produced. Canada's natural conditions provide a comparative advantage for beef production over poultry thus providing beef a more stable production outlook.

The relatively recent acceptance of crossbreeding, the importation of continental breeds in the U.S. and Canada (Charolais, Simmental), and selection emphasis by breedstock breeders on leaner and growthier types have all contributed to gains in efficiency of production as well as resulting in the production of an animal that can produce a product more reflective of the modern consumer demand.

More work needs to be done in this area to be sure producers are receiving the correct price signals as most pricing is still based on age and weight. Furthermore, the industry has embraced both artificial insemination and embryo transplants as tools of increased efficiency. Cattle feeders have always been at the forefront in advances of feed milling technology so there is no reason to suspect that they will become less competitive in this area relative to poultry and swine.

Beef marketing and promotion also lag those of poultry and pork. Few beef companies have attempted to differentiate its product and none have gained any real success. Swift had (early 70's) injected a plant enzyme into meat and claimed a tenderizing effect. The product, labelled "Proten," had mediocre reception. Excel, in the U.S, made a big attempt to launch branded tray packed beef over a five year period, but abandoned the project half way.

Monfort of Colorado, the only packer to feed substantial numbers of their beef cattle and thus control product quality to some extent has tried on a regional basis to label their beef. Again success has been variable, but gaining.

The beef industry has not developed for example a Swift Butterball, or Mapleleaf branding for fresh beef, nor with its lack of integration are any such developments expected.

Funds available to promote beef are spent emphasizing taste, nutritional value, and, as a counterpoint to cholesterol scares, its new leanness. A related threat that has not proven serious is the utilization of textured vegetable protein as a meat extender. Various products of this nature were introduced during the 1970's and never became a due to a lack of good taste. Price reductions of 25-30% were not enough to pull consumers away from their familiar ground beef. Obviously, this threat could become serious if manufacturers are able to develop a more palatable product.

Finally, any discussion of projected consumption of beef must take into account the minimum three years lag that occurs between the time the producer gets a positive demand signal and the resultant increased production begins coming to market. There are no shortcuts and it is a factor that is either positive or negative depending upon the prevailing market condition.

c) *Feeder Cattle Market*

i) **Market**

The market for feeder cattle is driven by the market for beef. It can also be driven by low grain prices because producers expect converting low priced grain to meat will provide higher incomes. As indicated above the beef market is expected to be stable or rise slightly through 1996. Consequently the market for feeder cattle should also be stable or rise slightly.

In the past couple years, the market for feeder cattle from B.C. has been good because beef demand has been strong and prices high. But, more importantly feeders and packers have tried to keep facilities operating near capacity, and this has resulted in a strong demand for feeder cattle. Also, grain prices have been low and this encouraged feeding.

Recently an over supply of cattle and weakened demand, due to recession and weaker demand, has softened the price for beef and in turn for cattle. Sparks Companies analysts expect the bottom has been reached and stability should return to prices soon, which in turn will create a stable demand for feeder cattle from Canada and B.C. in 1992.

It has been observed by the study team that packers are beginning to demand cattle which are leaner and have a more consistent cut out. B.C. cow-calf producers can build a niche for their cattle in the market if they work to monitor this trend and cater to meeting it. It could result in obtaining a premium price for their cattle.

ii) Marketing Methods

The predominant method for marketing feeder calves in the U.S., Canada and B.C. is through auction markets where a commission is charged for the selling services provided. However, some cattle are sold privately to feedlots or other buyers. Also, some cattle are retained by the cow-calf operator through backgrounding, and finishing.

Generally in B.C., feeder calves are brought to auction by cow-calf owners, and sold without really caring who buys them or where they go. Many (up to 75%) of the cattle are bought by order buyers, who act as agents on behalf of the ultimate buyer, or buy for their own account. The order buyer will go to a sale, scan the cattle available, talk to the buyer he may represent telling him what is available and what he may be able to purchase. If the buyer agrees to the purchase the order buyer executes the purchase and organizes to send the cattle direct to the buyer.

iii) Pricing and Price Discovery

The auction system is time honoured, and as a price discovery system, appears to work well in most instances. At least producers report that it results in the best possible price for their cattle. Certainly it provides a forum for the discovery of price as bidders compete with one another and pay what they believe they can, and still make a profit on the animal after they feed it and sell it on to a finisher or packer. The auction house generally reports the prices received each day publicly, thus letting sellers know what prices have been transacted.

While the auction system seems to be a good price discovery system in most cases, in bullish times the system can result in over priced cattle. This may be because backgrounders and finishers have expectations about markets which may be too bullishly based, or supplies of feeder cattle are so tight backgrounders and or finishers must bid high to obtain animals to fill feeding operations. Supplies may be tight when grain is low cost, because backgrounders and/or finishers all want to fill their feedlots in the belief that some profit will better.

Price differentials experienced at auction house sales vary, but primarily on the basis of age and weight. Price variations do not seem to relate effectively to other measurements such as the amount of lean or finish the animal is likely to yield. Therefore, if packers are looking for leaner cattle, which the study team has been told is beginning to be the case, the pricing system as presently implemented does not send a clear message to the cow-calf operator.

As long as buyers are willing to base price on age and weight alone, no change to a leaner animal with a consistent cut out will be made. Therefore, if change is desired the measurements on which price is based will need to be changed. The message must reach down to the cow-calf producer and breeder if genetic changes are to influence the final product produced.

iv) Quantity Moved

As mentioned above, auction markets are a common sales outlet for feeder calves in B.C. However, in recent years many head do not move through the auction market and are sold directly to feedlots, or ownership is retained by cow-calf operators and they pay a service fee to finishers to custom feed the animals for them. In 1990, a total of 341,720 cattle sales (calves, bulls, cows, etc.) were recorded by the Ministry's Brands and Regulatory Program as having sold through public auction markets.

When ownership is retained the cow-calf operator receives payment when the animal is finally sold; either to a finisher if the animal is being backgrounded; or to the packer if the animal is being sent for slaughter. Retention of ownership can be positive for producers because it provides the opportunity to utilize futures markets to their advantage; by selling when futures prices are best; rather than at a certain time each fall or spring. The producer, through the use of futures markets, can transfer some risk to others in the futures market.

v) Methods for Improvement Identified

While the auction market is believed to be a good method for marketing and establishing the price of feeder cattle, two deficiencies exist and include:

- Animals are subjected to unnecessary stress as well as bruising. This occurs because animals are moved six times (loaded, transported, unloaded, reloaded, transported again and unloaded again) before reaching the feedlot. If this handling could be reduced it would help greatly.

- Payments are made on the basis of age and weight only, but packers are moving toward wanting an animal that will have more predictable finish and cutability. Thus, means need to be investigated for putting practices and measurements in place that will send price signals to producers encouraging them to produce cattle with more predictable finish and cutability. This will help ensure a premium for properly finished cattle.

Given these areas for improvement:

- Some suggestions to reduce stress and bruising that have been or could be tried and expanded include use of video for displaying animals; examination of animals on trucks, purchases made without unloading, and electronic selling; bringing samples of calves to auction in combination with video.

While these methods could help reduce stress and bruising, none are fully satisfactory because the buyer wants to see the animals he is getting. Perhaps the best way, and only way, to overcome this problem is to have each producer determine ways that he can retain ownership of his cattle through the entire feeding process.

- To increase the number of animals that meet the finish and cutability standards sought by packers, it will be necessary to send a message to producers that indicates what is wanted. To accomplish this it is best done through the price paid for the animal; therefore, the measures used in establishing price will need to be shifted from age and weight to some grade and yield basis that has finish and cutability criteria incorporated in the pricing system. For this to work retention of ownership through the feeding process may be required.

To accomplish a change to a new pricing system, it will require educating producers. This may best be done by having a consultant tied to the auction house that works with packers and producers to bring information to producers about what packers require. The consultant would help producers by developing programs that explain what producers must do to better meet packers needs. For this to work best, the consultant must be viewed as a person representing the packer, but the government could help by providing grant funds that would cover some of the cost for the consultant.

d) *Backgrounders*

i) Market

The market for backgrounded cattle, as in the case of feeder cattle, is driven by the market for beef and possibly low grain prices. As indicated above, the beef market is expected to be stable or rise slightly through 1996. Consequently the market for backgrounded cattle should also be stable or rise slightly, unless grain prices remain unusually low.

In the past couple years the market for backgrounded cattle from B.C. has been good because beef demand has been strong and prices high; grain prices have been low; and, feeders and packers have wanted to keep plants running at capacity. Since August, 1991 an over supply of cattle and weakened demand due to the recession, has softened the price for beef and in turn for cattle. Sparks Companies analysts believe the bottom is nearing and stability should return to prices, which in turn will create a stable demand for feeder cattle from Canada and B.C.

ii) **Marketing Methods**

Generally the backgrounder sells cattle direct to a finishing yard without going through an auction. However, variations may exist because backgrounded cattle can be held by cow-calf producers on range; by drylot feedyard operators that pre-condition for sale to finishers; and/or by finishers themselves who buy cattle and keep them on range or in pre-conditioning yards until they are ready to take to the finishing yard. Though in most cases, the backgrounder will negotiate price without going through an auction ring.

iii) **Pricing and Price Discovery**

In Canada - especially in western Canada, CANFAX is the principal clearing house for price discovery/reporting of the day to day markets for both feeder and finished cattle. CANFAX is an arm of the Canadian Cattleman's Association (CCA) and operates with a competent staff within CCA's Calgary head office; alongside the Alberta Cattle Commission and Canadian Beef Export Federation.

Cattle producers and feeders subscribe to CANFAX membership and receive regular daily price information of a broad range of private cattle sale transactions. This information is supplied by (and collected from) members themselves, plus many other outside parties whom CANFAX contracts daily (often several times a day) by phone or fax.

CANFAX members have a vested interest in knowing prices, because they are motivated to furnish their own transacted prices to keep the service accurate, broadly based, and viable. CANFAX especially focuses on major feedlots and packers to maximize monitoring of private sale prices. It also does its own daily economic and commercial analysis of all factors likely to affect the marketplace. This includes monitoring all market wire services, futures markets (which influence the cash market in many ways), newspapers, radio, journals, auctions, market reports, and similar reports. It provides some price forecasts to members, but this is often risky. CANFAX listens closely with its U.S. counterpart (Cattlefax, an arm of the U.S. national Cattleman Association in Denver, Colorado) to weigh up U.S. market happenings and influences, and to relate U.S. market prices (a dominant factor across the continent) to Canadian market prices. There is no perfect system for monitoring public auctions to provide open market price information (which is what producers like).

Large numbers of cattle are traded today between feedlots and packers on a forward pricing/delivery basis to keep a regular flow of cattle coming to packers. Delivery might be contracted some months ahead, at a fixed price or else on an agreed price formula basis which can vary. In this situation hedging protection by both parties may be required when these cattle are actually delivered for slaughter. There is no new sale or price transaction recorded on that day, because it has been pre-determined. CANFAX cannot establish an actual "today price" for these cattle, which often make-up a sizeable proportion of daily kills.

Also, some packers own sizeable numbers of cattle themselves, which may be custom fed or occasionally fed at the packers own feedlot. Canada's, Lakeside is an example of the latter. Transfer pricing of cattle moving from a packer's own feedlot to its slaughter plant is rarely if ever disclosed, nor is the pricing of any packer-owned cattle after going on feed for finishing.

Traditionally, packers resist unlimited disclosures of prices they pay above or below "average". Thus there are many gaps in price discovery. There is ongoing debate and controversy, often prompting government inquiries.

In the U.S., there are daily price monitoring systems, such as Yellow Sheet (National Provisioners), Meat Sheet (both in Chicago) and USDA Market Price Reports from Washington. They all lack complete coverage. They all try to verify prices by contacting both buyer and seller in each transaction for confirmation, but this means taking people at their word. At best, the system is a range of prices. The Canadian Federal Government publishes weekly slaughter and price reports for all livestock, but there are time lags in publishing.

vi) Methods for Improvement Identified

The primary area for improvement in marketing backgrounded cattle involves ensuring that cattle are being fed in a manner that produces an animal most like what the packer wants. That is, measures to establish price should not focus strictly on age and weight when yield of lean meat are becoming most important. Therefore, a system similar to the one discussed above for cow-calf operators ensuring feeder calves are produced as wanted, could be established for backgrounded cattle. That is, a consultant could bring the message to the backgrounder through liaison with the finisher and packer, the ultimate buyers.

However, it must be kept in mind that the backgrounder can influence how the animal is produced only through feeding practice as genetics are fixed.

In addition to providing the type animal wanted, the backgrounder should be prepared to ship cattle to the finishing yard when wanted. The finisher should work closely with the backgrounder to provide the delivery time message. While the backgrounder is limited to the natural growth cycle of the animal, feeding time can be shortened or lengthened through varying feed rations. This communication is important to stabilizing the flow of animals to the packer.

e) *Finishers*

i) **Market**

The market for finished cattle, as in the case of feeder and backgrounded cattle, is driven by the market for beef and possibly low grain prices. As indicated above, the beef market is expected to be stable or rise slightly through 1996. Consequently the market for finished cattle should also be stable or rise slightly, unless grain prices remain unusually low. In that case, more cattle will be fed and prices will be pressured lower.

ii) Marketing Methods

Packers generally work with finishers and establish forward contract agreements for a certain quantity of animals at a certain time. These relationships are usually negotiated directly between finisher and packer.

iii) Pricing and Price Discovery

The price the packer pays to the finisher is discussed previously under Section III-D-3-d-ii. Price is often determined by formula, based on the National Provisioner/Yellow Sheet daily quote for carcass or cutout value. At this stage the grade of the animal, as well as its weight determine price. However, if the supply of animals is short, weight will be the most important determinant as packers want to keep their plants operating. When cattle supplies become abundant the packer can become more discriminatory and grade may become the more important factor in determining price.

For example, during the past two to three years packers have scrambled for cattle so they would take most any animal. However, in the past several months cattle have backed up in feedyards and have become over-sized (particularly exotic crossbreeds) and over weight resulting in lower prices. These over-sized heavy cattle are not wanted by the consumer or retailer and consequently the packer. Therefore, these cattle in the past couple months have been heavily discounted by packers if bought at all. Thus, in times of abundant supply it is easier to influence producers and finishers to feed cattle as wanted by packers.

Occasionally packers will try to forward contract on price as well as quantity, but the final price is not usually determined until the animal is cut out and the grade known. In some instances, particularly when the supply of cattle is short, packers may purchase animals and have them custom fed according to their needs.

Price for finished cattle is generally never established by an auction house.

iv) Methods for Improvement Identified

The primary area for improvement, as in the case of calves and backgrounded animals, is to ensure cattle are being fed in a manner that produces an animal most like what the packer wants. That is, measures to establish price should not focus strictly on age and weight when yield of lean meat is becoming the most important criteria sought by the packer. Therefore, the packer must continually send the proper message to the finisher and the best means is through price. If packers want a certain type animal they must work to send their message to all stages--cow-calf, backgrounder as well as finishers--to ensure the message is being transmitted to the lowest level in the production chain.

In addition to communicating to finishers the type animal wanted, the packer must indicate when the animal should be delivered. Generally the delivery schedule message is transmitted when the packer forward contracts for a certain quantity of cattle at a certain time. While the finisher is limited to the natural growth cycle of the animal he can vary the feed to shorten or lengthen the time he keeps the cattle. Communication between packer and finisher is important to stabilizing the flow of animals to the packer.

4. *Comparison of B.C. Beef Industry Competitiveness*

a) *Cow-Calf*

i) Introduction

B.C. has a long history in the cow-calf sector dating back to the gold rush era. The January 1991 inventory was 233,000 head of beef cows in B.C. This compares to 357,000 or 50% more cows in Washington and 1,475,000 or 630% more cows in Alberta than in B.C. As the next section will document, B.C. cow-calf operations are divided among very diverse regions, with all but the Peace River area ranches located among mountains and its valleys, far from grain supplies. Grain supplies are much closer to competitive ranches in Alberta and Washington.

While many cows are raised on part-time, small operations in Canada, B.C. has an especially large number of very small and very large farms with beef cows. Producing less than 18 head were 63% of the 1986 B.C. producers (the most recent census year available). This compares to only 33% of farms that size in Alberta. Both provinces, among Canadian provinces have the largest proportion of cows in the 48 to 122 cow category according to the 1986 census.

Proportionately more B.C. cows are raised on large ranches compared to Alberta - 16% of the cows in B.C. were on ranches over 527 head while only 3.7% of cows in Alberta are on operations of similar size. The B.C. data includes a number of very large operations such as the Douglas Lake Ranch which have over 5,000 head of cows. "Intermediate" size ranches between 178 and 527 cows produce a larger proportion of the cows compared to Alberta. In this size range, where many producers are full-time ranchers, B.C. in 1986 had 198 ranches; 3.4% of total ranches; but they produced 24.1% of total cows in the province. This is similar to Alberta as regards proportion of ranches (3.0%); however, in Alberta only 16.9% of the cows are produced on these "intermediate" scale operations.

The commercial cow-calf sector in B.C. is relatively small in the North American context with about 225 ranches with over 178 cows. It is dispersed over a large area of difficult geography that inhibits collaboration among producers. However, the high proportion of B.C. cows (39.8%) in this commercial sector as compared to Alberta (with only 20% of cows on ranches that have over 178 cows) suggests B.C. producers can capture most economies of scale available to cow-calf operators. Furthermore, the small number of ranches may enable joint activities and rapid innovation to improve competitiveness or marketing.

The study teams examination of cow-calf operations in B.C., Alberta, and the PNW found that each area has conditions that support efficient production. Most important to efficient cow-calf production is the availability of abundant good quality forage for grazing and wintering. PNW is similar to B.C.'s southern region with a dry climate and scarce natural forage. Cow-calf producers in the PNW utilize public grazing lands, alfalfa re-growth, grain stubble or corn stalks as their primary feed sources.

Occasionally, when wheat prices are low, some grain is available to cow-calf producers. Southern B.C. producers experience a similar condition, with the exception of occasional surplus grains.

On the other hand, Alberta is different in that the topography supports Canada's grain belt. This allows cow-calf operators to produce grains and cattle and as a consequence feed mixed blends of forage, straw and surplus lower quality grains. In recent times; however, the herd has been shifting north to areas of more ample forage.

ii) Regional Comparisons within B.C. and Between Alberta and PNW

Several technical variables -- pattern of terrain, land and pasture availability, feed resources and practice, availability and reliability of water and breeding patterns and practices -- characterize and make the B.C. cow-calf sector unique.

Cow-calf production draws on the natural comparative economic advantages of B.C. cows and their calves can graze the mountainous terrain and take advantage of the native grasses that grow among the forest clearings. Forage growing areas in the mountain valleys can produce enough feed at low cost to support a modest cow-calf herd.

Calves can be transported to local feedlots for backgrounding or finishing; or shipped to feedlots in Alberta and/or the Washington Columbia basin competitively. Cows and calves can be produced at competitive costs with Alberta or PNW. Cow-calf production should be continued and expanded as forage and grazing developments permit.

The terrain of B.C. is diverse, and with the exception of the Peace River region each region is characterized by mountains and valleys among the mountains, which are far from grain supplies. Within the valleys and among the forested areas of the mountains forage production and grazing can be found and selected numbers of cow-calf operations can be successfully supported. The Peace River region, among the B.C. regions offers the best topography for expansion of cow-calf operations.

Water is in ample supply throughout all regions. Breeding practices can be controlled and do not represent a barrier to efficient cow-calf operations within any of the B.C. regions.

The foundation of a sound cow-calf operation is its forage base. Feed for wintering is important to carry the cow, and the calf if the operator intends to carry the calf through "backgrounding". The feed factor is the most important determinant of competitiveness between regions.

Forage availability, elevation, and rainfall play a major role in determining the number of days that cows must be fed, and is the largest single cost to the producer. Forage for both grazing and hay or silage is required to carry cows and calves through the year.

Findings from interviews suggest that baled hay is the most common means of storing feed, but producers from regions 3, 4, 5 complained of difficulties in putting-up good quality hay due to weather. Hay baling is the preferred method of preparation and storage. Silage was a second alternative, prepared chopped and stored in pits or bags or as round bale silage in plastic bags or covered piles.

Producers interviewed said these methods of silage making can be economical in most regions but the adoption of the techniques by producers has not been rapid. One reason is the fact that many producers with herds of less than 400 cows have off-farm income. Employment requirements means forage is put-up after hours or on weekends. This has made assembling crews to make silage difficult, particularly for long periods of time. Therefore, although forage quality may be sacrificed, off farm income is viewed to be more important.

Part time ranchers, whose lack of commitment to grow large and be self sustaining, account for a significant percent of B.C. cow-calf enterprises. As discussed earlier, the utilization of the forage base for winter feeding is key; and the regions that best meet the needs are those that offer highest opportunity for cow-calf production. As indicated in Table III-7 regions 4, 5, and 6 look to offer the best natural supply of grazing and forage. Regions 1, 2 and 3 can produce forage but much of it must be done on irrigated area and at high cost. Also in regions 1, 2 and 3, grazing land is high cost. Among the B.C. regions the Peace River region is the best served naturally by grazing, forage and feed grain supply.

Examination of B.C.'s regions indicate that the northern regions support the best forage production and availability of other feed sources. These northern B.C. regions offer as good an opportunity to expand cow-calf production as anywhere in the Pacific Northwest, due to grazing, forage for wintering and access to surplus grains from the Peace.

Table III – 7: Technical Comparison of Cow–Calf Sector in British Columbia Regions

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
A. Description of Operation	This region has the smallest percent of the cow herd. Herds are small and operated part time with good off farm income. A large dairy sector pressures feed prices upward. Urbanization has created competitive pressure on land prices, pushing them upward so ranching is not economical.	This region contains 23% of the cow herd. The oldest ranches of the province are in the bunchgrass area of this region. In the Okanagan part, feed prices are high due to a significant dairy industry. Land costs are high due to competitive pressure on land prices from urbanization. The region has a short winter feeding period of about 120 to 135 days which contributes to lower labour requirements. The very hot and dry climate in most of the region reduces requirements for facilities.	Contains 18% of the cows and a winter feeding period of 160 – 180 days. The labour requirement is higher than in region 2, due to the longer feeding period. A considerable wildlife problem exists and feed storage facilities must be barricaded. The early spring pastures are pressured by the large wildlife population.	Accounts for 20% of cows and a feeding period of 180–200 days. Pasture is largely cleared land or Crown range. In some cases the longer feeding period and cold climate require shelter for feeding.	Accounts for 19% of cows and a feeding period of 190–220 days. The climate is characterized by hot rainy summers and long cold winters with high snowfall. The grazing lands are primarily Crown range and deeded cleared land. The cows are dry lotted in the winter in facilities similar to central alberta. Cattle industry occupies only the Southern fringe of this large region.	Accounts for 19% of the cows. The region is east of the continental divide and is logistically an extension of northwest Alberta. It has the longest feeding period but feed prices are low due to large areas of cultivated land. The climate is characterized by a short wet summer of lush pastures and long cold winters that require complete feeding facilities.

Table III – 7: Technical Comparison of Cow–Calf Sector in British Columbia Regions

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
B. Technology						
- Pattern of Terrain	Deep wide valleys surrounded by large rugged mountains.	Wide valleys containing large lakes surrounded by moderate mountains.	Narrower valleys with mountains surrounding them.	Rolling are covered by forests.	Rolling hills, forest covered with many rivers and creeks.	Rolling hills, forest covered to the west and large areas of cleared cultivated land to the east.
- Land and Pasture Available	Very high urban pressure on much of the coastal area. Very high dairy sector pressure on most of the land suitable for forages.	High urban pressure and a moderate dairy sector keep land at a high value. Crown Range demand is high as operations try to expand.	Crown range is in demand. The forage areas are the limiting resource.	Ample Crown range but forage production areas are a constraint.	Ample Crown range but limited cultivated forage areas.	Ample pasture and forage area.
- Feed Resources and Practices	Corn silage and hay are the largest feed source with hay being predominant. Both are farm grown or hay can be purchased locally within the valley at high cost. Wheat screenings are purchased locally at terminals.	Corn silage and hay grown in irrigated valleys. Some cereal and alfalfa silage is also available. Although 2,100 acres of barley is grown in the North Okanagan Most barley is railed in as a supplement to hay.	Alfalfa hay and barley silage grown in irrigated valleys. Haying predominant, but it is high cost.	Alfalfa hay and cereal silage grown. Larger operations use silage while hay is perdominant with smaller herds. Forage is readily available.	Hay and cereal silage are grown locally and in good supply but can vary from year to year.	Hay and cereals grown locally. Grain and straw or green feed widely available.
- Availability and Reliability of Water	Ample supply on pastures and leases in most cases. Irrigation water not generally required.	Many mountain streams but in some areas water in pastures can present a problem, particularly in the bunch grass area where cows have long	Supply slightly better than region 2 for cow–calf grazing. Water is sometimes short for irrigation purposes.	Ample supply in most years.	Ample supply.	Fewer streams so dug outs have become major storage source for winter watering. Ample supply.

Table III – 7: Technical Comparison of Cow–Calf Sector in British Columbia Regions

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
		walks to water. Water in summer can be a problem in dryer years, particularly for irrigation.				
– Breeding Patterns and Practices		Typically British type cows using exotic type bulls. Calving at home February to May time frame. Will use 15–20 cows/bull. Breeding will start on good spring pasture before going to large, dryer base areas.	British type cows crossed with exotic bulls. First regions to use exotic breeds. Use 15–25 cows/bull and starts breeding program on forage base pastures before moving to larger summer pastures. Calving in February to May period.	Chilcotin still has many British breed cattle. Others are primarily crossbred European cattle. Calve in March to May period. Use 15–20 cows/bull.	European exotic crossbreds are predominant. Use 15–20 cows/bull and will calve in the February to May time frame.	European exotic crossbreds with larger exotic cows on some operations. Use 15–30 cows/bull and tend to flush cows prior to breeding season. Will calve in the March to May time period.
C. Opportunities						
– Related to Feeding	The Fraser is not a region of focus for significant cow–calf expansion. Primarily because land, and feed are high cost. Also, pressures of an expanding urban center bring about social and environmental concerns that will become more important in the future.	As a traditional cow–calf region, it will remain important in the future. However, trends toward greater urbanization; increased land prices; brings about competing uses (recreational) for Crown lands; and creates more social/environmental interface with the industry. Also, feed is less available or higher	The Kootenay has been a traditional cow–calf region; but future expansion is limited. Technically it is limited by a shortage of high cost forage; and intense wildlife problem that pressures grazing availability in spring on Crown lands; and limited availability of deeded land on which to base expansion.	The Cariboo–Chilcotin region is important and expansion of cow–calf herds is possible as the region is not as developed as Regions 1, 2 or 3. The region has ample Crown land, and if deeded forage land can be obtained, grazing land is not a problem. Forage is said to be readily available and reasonably priced and	Similar to the Cariboo–Chilcotin region, this region offers growth potential. Crown land is available, forages are locally grown and in good supply providing a fundamental technical advantage over Regions 1, 2 and 3.	The Peace River region offers the best potential to expand technically. Land is available, both deeded and crown, at reasonable cost. Topograghy lends to forage and grain production resulting in a region of good feed supply at reasonable prices. The primary disadvantage is the length of winter over

Table III – 7: Technical Comparison of Cow–Calf Sector in British Columbia Regions

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
		cost than in other regions due to competitive pressure for it and a need for intensive irrigation. Region 2 is not best for future expansion.	Region 3, like region 2 is not best for future expansion.	this is an important driver for expansion.		which cows must be kept, but the abundant feed supply overcomes much of this disadvantage.
- Related to Animal Performance	Better utilization of forage, could move to a shorter calving period. Look at intensive grazing managment on feasible areas. Consider more exotic breeding stock.	Use more European exotic cross cows with exotic bulls to improve weaning weight. Utilize cultivated forage base better through silage and consider fall grazing potential as an opportunity to put low cost gains on calves.	Use more wildlife fences to control the overgrazing of spring and fall grazing areas.	Use more crossbreeding programs to improve weaning weights.	Possible move to exotic type cattle using high bull numbers and a flushing program to shorten calving period. Calving facilities are essential.	Like region 5, Use more European exotic crossbreds. Must have good facilities to calve in due to the harsh winter. Therefore must have good quality forage or use relatively cheap barley. Use rotational grazing where possible to better utilize forage.

The beef cow herd in Alberta has remained relatively stable since 1956, however the distribution of the herd has shifted north to the areas of ample forage. The vast majority of cows are held by mixed grain and livestock operations. The cows have become a means of utilizing marginal land. Few quarter sections are completely cultivated so the remaining marginal land combined with straw and possibly poor quality grain can be used to maintain a cow herd.

Although the largest proportion of cow herds are in the 48-122 cow category (1986 Census), the cost of maintaining smaller herds is low because costs can be shared with grain production costs. Most Alberta cows are held by small producers in combination with grain operations. This allows these producers to be extremely competitive with B.C. or PNW producers.

The terrain of Alberta is much less severe than that of B.C. with more plains and gently rolling hills with aspen forest cover. The cow-calf operations tend to concentrate in the central and northern region of the province where cattle graze in aspen park like areas and on bunch grass plains. This terrain is supportive of cattle grazing at ratios which range from 2 to 40 acres per cow, and most common in the range of 8 to 12 acres per cow. Alberta range is more supportive than B.C. grazing areas where 10 to 15 acres are not uncommon.

Water is available throughout Alberta, with the exception of the southeast central region. In the cattle herding areas of the province, water is not a concern. Breeding practices are based on British and/or exotic cow crosses and these crosses are generally bred to exotic type bulls. Breeding normally occurs on spring pasture and cows calve during February to May; similar to B.C. The genetics used can be controlled and does not represent a barrier to running efficient cow-calf operations in Alberta.

As mentioned earlier, the foundation of a sound cow-calf operation is its forage base. Alberta has ample land resources in the cow-calf producing areas of the province, with pasture in abundance in the northern regions, both on private and public rangeland. Further, forage can be produced in nearly all areas of the province either to be stored as hay or silage. In addition, feed grains and straw are available to many cow-calf producers. Feed is not a constraint to cow-calf production in Alberta.

In fact, the abundance of grain and straw in most areas of the province is because many producers have grain production activities as well as cow-calf operations. Because of this, little added fixed cost for equipment is required to harvest forage for the cow-calf operation. The expensive equipment, such as tractors, land preparation equipment, and some hay harvesting equipment can be shared among the grain and cow-calf operations; lowering significantly the cost to raise cows and calves. This makes Alberta extremely competitive as a cow-calf production region.

The cow herd in Washington State (PNW) is about 357,000 head. This is a larger herd than in B.C., but the production of cows and calves in PNW is not technologically more efficient than production in B.C. or Alberta.

The terrain in the PNW varies from mountainous grass and forest covered areas to rolling paloose plains. The region west of the cascades and directly south of the southern interior region of B.C. is nearly desert. It is similar to the region to its north in B.C. The Paloose is a major wheat growing area and provides some stubble grazing. Further to the west into the cascades and to the east in Idaho, grazing is similar to that found in the mountain grazing areas of B.C.

Without irrigation, cow-calf operations in the PNW are not technologically different than operations found in B.C., with the exception that wheat straw and off grade wheat can be available as a feed source. Mountain streams and the irrigation waters of the Columbia River, lakes and ponds provide ample water in most grazing regions of the PNW. Wells are used to augment supply. Water is not a major concern in the region.

As in B.C. and Alberta breeding practices are based on cross bred british and exotic cows crossed with exotic bulls. Genetics are controllable, and possible to change as the market demands; therefore, it is not a barrier to cow-calf operations in the PNW.

As in the case of B.C. and Alberta, the foundation of a sound cow-calf operation is its forage base. PNW has ample land resources in the cow-calf producing areas of the region and over 500,000 acres of land irrigated by the Columbia River permits production of alfalfa hay, grain stubble or corn stalks. Also, vegetable and fruit products produced in the region result in an abundant source of feed for carrying cows and calves through the winter. Generally, alfalfa hay and minimal amounts of grain carry the cows through the winter.

As in the case of Alberta, a number of cow-calf operators have other operations -- wheat, fruits or vegetables -- over which to spread the cost of the equipment used to prepare forage land, hay and/or silage. Thus, as in Alberta the PNW cow-calf operator can be as competitive as the producer in B.C. and or Alberta technologically.

iii) Costs

Variation in available technical resources, primarily native forage, shifts the advantages of the regions. This study examined the relative differences between the six regions of B.C., the province of Alberta and the U.S. Northwest states of Washington and Idaho to identify cost per cow comparisons. The method used to examine relative differences in cost per cow was to take the first difference between all regions against a constant. Alberta was used as the base region against which to compare costs. Alberta was used as the base because it is most often viewed as the major competitor of B.C. Since relative differences are examined items with identical costs in each region are not shown. The costs are based on 1990 averages.

The results of the cost difference comparison are presented in Table III-8. The most important finding of the comparison is the difference associated with the cost/cow of farm grown feed and the cost/ton of locally available feed. The Alberta producer is more competitive than the B.C. producer. Feed costs are lower, due to the fact that fixed machinery costs can be spread over both a grain operation and cow-calf operation.

Table III – 8: Cow–Calf Cost & Technology Differences, First Difference of B.C. Regions & PNW With Alberta

Category	Units	Southern Interior 2	Kootenay 3	Cariboo–Chilcotin 4	Bulkley–Nechaco 5	Peace River 6	PNW
Labour	Cows/man/year	112	5	8	0	-1	38
Bull Coverage	Cows/bull	-4	2	-5	1	0	-4
Culling rate	Percent	6	0	5	9	11	3
Weaning weight	Pounds	-50	-15	-85	-5	0	-75
Winter feed period	Days	-90	-40	-30	-20	0	-100
Farm forage	Cost/short ton	88	36	42	54	18	N/A
Local hay price	Cost/short ton	32	32	32	12	2	5
Farm grown	$/cow	65	44	68	141	43	114

Notes:

Positive value indicates more or greater compared with Alberta, negative indicates less or smaller compared with Alberta.
Fraser Valley has no cow–calf operations, thus no calculations are presented.

Source:
1989 & 90 cow/calf enterprise analysis of BCFAFF, and ADA. Washington state data from Washington State University for 1990. Consultants interviews and estimates applied to 170 to 1,000 cow herds.

The shorter winter feeding period is an advantage in all regions of B.C. over Alberta except Region 6. However, lower weaning weights in B.C. Region's 2,4,5 combined with higher feed costs, more than offset the advantage. In comparison with PNW; weaning weights are higher in B.C.; but winter feeding periods are shorter resulting in offset costs. Feed costs will determine the advantage between PNW and B.C. and PNW appears to have higher costs for home grown feed giving all but region 5 of B.C. an advantage for carrying cows and calves.

When interviewed, the study team found some producers who did not know the cost to produce a ton of hay; rather they valued their hay at the local market price in their region. Referring to Table III-8, the market price for hay in Region 2 is $32 higher than in Alberta, but the study team calculated the cost to raise that hay to be $88/ton higher than in Alberta; giving Alberta a significant competitive advantage in forage production. This arises largely from the fact that forage production in Region 2 is under irrigation.

Referring to Table III-9 where the various direct expenses per cow are set out, Alberta has markedly lower costs than B.C. The majority of the difference is in the cost of farm grown feed. While trucking and marketing vary considerably, some areas of B.C. are lower than Alberta and others are above.

Table III – 9: Cow–Calf Enterprise Direct Expenses

Regions	Alberta	S. Int. 2	Kootenay 3	Cariboo 4	Bulkley 5	Peace 6	PNW (Can$)
Farm Grown Feed	150	215	194	218	256	193	264
Feed Supplement	9	9	14	19	8	6	11
Mineral and Salt	9	6	9	6	7	8	15
Veterinary and Medical	14	14	20	18	16	18	21
Livestock Supplies	3	3	2	3	3	3	2
Marketing and Trucking	16	14	17	15	19	22	3
Farm Income Insurance	0	10	11	14	10	10	0
Grazing Fees	13	13	9	11	10	12	14
Fuel and Lubrication	18	11	14	11	11	11	7
Machine Repair	18	11	12	12	14	7	11
Other Livestock	0	4	5	8	2	10	8
Total Direct Expense	250	310	307	335	357	300	357
Total Direct Expense Difference	0	60	57	85	107	50	107
Farm Grown Feed as % Dir. Expenses	60%	69%	63%	65%	72%	64%	74%
PRODUCTION							
Weaning Weights	510–600	450–600	500–600	475–600	450–550	500–600	500–550
Cow/Man/Year	100–125	143–300	105–140	100–140	100–125	100–110	N/A

FOOTNOTES:

Exchange rate at 1991 Economic Council of Canada projection = 0.87

Fraser Valley does not have Cow–Calf operations.

SOURCES:

BCMAFF 2–year data and ADA 2–year data for 1990–1991 and for 1989–1990 cow/calf enterprise.

Washington State University data and SCI interviews for 1990.

Consultant interviews and estimates applied.

iii) Summary

Region 6 has the longest feeding period but the lowest cost for farm forage, hay and farm grown food, resulting in a significant competitive advantage over other regions of B.C. Even when (refer to Table III-9) examining total direct expenses which include freight to market this region has an advantage over the rest of B.C. The farm grown feed in Region 6 is lower cost due to grain production and the utilization of associated by products. The labour, i.e., cows/man/year is similar to the B.C. average, but not as good as Region 2. The largest single advantage is the availability and cost of forage.

Further to its competitive advantage, the heaviest wean weights in B.C. come from Region 6. This is attributed to the fact that cultivated forage pastures are in high use. Weaning weights under these conditions can be considerably higher and will permit the use of larger faster gaining crossbreed cows and exotic bulls. The availability of large acres of cultivated forage has allowed producers to maintain a scale of operation, such that off farm income is not of highest priority, as in some areas. The forage of choice has been cereal silage or greenfeed because of its abundance. Also, availability of reasonably priced feed grains has given the producer additional feeding flexibility. That is, if the silage or greenfeed is of lesser quality then it can be supplemented with grain to provide required nutrition.

Region 2 has the largest and oldest ranches, the shortest winter feeding period; and the most costly forage of the B.C. regions. It is the highest cost region to carry cows and calves among the B.C. regions and therefore least competitive.

Many part-time ranchers, value the rural life style of B.C. and tend to skew data because they are not really commercial cow-calf operators. These producers have traditional values and are not inclined to change for improved efficiencies. The industry has had many of the skills, resources and incentives to change, but many of the incentives have resulted in an entrenchment of the status quo as opposed to the development of an action plan aimed at producing change.

The part-time rancher will remain, but this study focused on the commercial cow-calf sector. Commercial cow-calf operators in general recognize they must change, but believe they are at a competitive disadvantage because of policies adopted by the Alberta government, and therefore, have resisted change. The B.C. cow-calf sector has higher farm grown feed costs because it has no other enterprise over which to spread machinery investment. In Alberta equipment is used for both grain and cattle enterprises. In many areas of Alberta custom silage is available. However, due to the geography of B.C., and dispersion of operations among many remote valleys, custom forage operations are unlikely to develop. Therefore, the cow-calf operation must pay for the equipment investment necessary. This puts B.C. producers at a competitive disadvantage.

Since farm grown feed is the highest single expense to the cow-calf operator, better forage management is a necessity in B.C. Producers are too often pre-occupied with gross volume as opposed to quality. The forage base must be fertilized, sprayed for weeds, and be harvested on time. The forage base requires a level of management equal to that of the cows during calving in order to obtain maximum returns.

The perception of low costs may exist among producers since many of the irrigation systems are gravity fed, i.e., require little or no pumping; thus, the production cost are very low. Irrigation is labour intensive and requires excellent water management to maximize production. The associated costs of management and labour are significant. With the excellent growing conditions and adequate inputs, good quality forage should be readily available. B.C. cow-calf producers will decide to retain calves if ample feed is available. An example of this occurred in 1991. After a record forage year, B.C. calf prices are among the highest in western Canada because producers will only part with their calves at a premium or background the animals on the excess forage. The view that excess forage can not be profitably marketed leads to backgrounding regardless of potential margins.

b) *Backgrounding*

i) Introduction

As mentioned earlier in Section III-C-3, the backgrounding segment is the segment that takes calves after weaning and carries them until ready to be placed in a feedlot. It is generally recognized as the growth period when feeder calves add weight from 500 lbs. to about 800 lbs. (227 to about 363 kg). It is also the time when the calf becomes accustomed to feedlot eating particularly if backgrounded in a "drylot". It should be emphasized that in recent years, backgrounding as a distinct segment (grazers of stocker-feeder cattle) is gradually losing its separate identity (in the U.S., Canada and B.C.). This is because of a combination of factors involving heavier weaning weights, and feeding younger and lighter cattle.

The cow-calf operator's financial interests can be enhanced by backgrounding since cattle are held off the market. The increased time period spreads out marketing for possible higher prices outside the fall run. The extra time often has merit when cattle can be hedged profitably; yet the additional risk must be rewarded or cow-calf producers will sell calves straight from the cow.

Producers hold or buy calves to background when excess forage is available. Ranchers having the ability to produce more feed than required to winter the breeding herd can feed forage to backgrounders. This is particularly the case when the producer has no access to additional summer range; therefore, making it difficult to increase the cow herd. Winter backgrounding uses extra forage while avoiding the summer range grazing constraint.

From the viewpoint of individual ranchers and B.C. producers collectively, backgrounding increases the overall value added (and usually increases the margin) on the ranch in B.C. It is an activity, if managed properly, that allows cow-calf operators a logical business extension and builds on the natural comparative advantages of the province.

ii) Backgrounding in British Columbia:

The study team found that backgrounding can be done according to different regimes and the most common in B.C. are described below:

- Grassers:

  Grasser refers to the practice of taking the calf off range in the fall; feeding it on a forage based low cost ration through the winter; and, placing it back on the range during the next summer to go to the feedlot at about 14 to 18 months of age for finishing to 1,100 to 1,300 lbs. (499 to 590 kg).

- Drylot Backgrounding:

  Drylot backgrounding refers to the practice of taking the calf off range in the fall at an average of 500 lbs. (227 kg) and feeding it intensely enough to bring it to 750 to 800 lbs. (340 to 363 kg) at 12 to 15 months of age. It is then either shipped to another feedlot or kept for finishing to 1,100 to 1,300 lbs. (499 to 590 kg).

Variations on these two regimes exist and one which is gaining importance in the U.S. is refereed to as pre-conditioning. Under this regime a combination of drylot and grasser is used. The calf is brought to a small drylot feeding center where it is placed with other calves and fed reasonably intensely on forage and grain for four to six weeks. During this period the calves learn how to eat in a yard, become culturally adapted to a group of other calves, have disease problems controlled and are pre-conditioned for survival in a large feedlot. From the drylot, pre-conditioned calves are separated into lots of similar size and weight and taken to winter pasture areas as grassers (generally wheat pasture) and kept on pasture and minerals until pasture runs out. In some cases they may go directly to a finishing yard. At this time they are placed in the feedlot in groups of similar size and weight and finished according to an intense feeding regime until they reach finished weights.

In addition to differing backgrounding regimes there are different ownership arrangements for backgrounding including:

- Cow-calf operators that decide to retain ownership. These operators that have abundant forage may keep lighter calves as grassers. Heavier calves 600 to 700 lbs. (272 to 318 kg) may go directly to a custom feedlot to be drylot backgrounded and then sent to a finishing feedlot until finished at 1,100 to 1,300 lbs. (499 to 590 kg).

  The cow-calf operator's financial interests can be enhanced by backgrounding since cattle are held off the market. The increased time period spreads out marketing for possible higher prices outside the fall run. The extra time often has merit when cattle can be hedged profitably; yet the additional risk must be rewarded or cow-calf producers will sell calves right from the cow.

- Feedlot operators that decide to buy calves and background to ensure a supply of their finishing lots. They may keep the calves as grassers through the winter on areas where they have forage and range. They may place the calves owned or custom drylots to ready them for their finishing feedlot.

- Full time drylot backgrounder operators who take ownership of calves and specialize in backgrounding lighter calves to 750 to 800 lbs. (340 to 363 kg). Generally, these are operators that have abundant forage and access to reasonably priced grain.

  The full-time drylot backgrounder is beneficial to the feedlot operator. He produces feeders for the finishing lot that animals are filled out, more prepared for the rigors of feedlot eating gain faster in the feedlot, and have less disease risk. Properly prepared backgrounded feeders can help to ensure high feedlot profits for the finisher.

These are the principal forms of backgrounding and their ownership. In some instances, when cattle supplies are tight, a slaughter/processor may contract forward for cattle; thus, taking ownership of backgrounded animals. This practice is much more common with feeders being finished.

In any event the options for backgrounding can be numerous and each is tailored to a specific set of circumstances. In evaluating the different practices the study team has kept comparisons to the primary options of grasser and drylot backgrounding; the most common practices in B.C.

Thompson-Okanagan producers, particularly in the bunch grass area, have a short winter feeding period, but if production of sufficient feed is thwarted by drought in this dry climate, feed to carry animals through the winter can become very expensive and render backgrounding uneconomic. Winter feed is often a constraint in this region, to holding animals over for additional backgrounding on ample spring grass. Some producers are expanding high energy forage production, but need to be mindful of machinery and labour costs, as improper management of these costs can quickly make this forage uneconomic. Innovative producers are backgrounding calves in other regions, that have ample feed, and hauling them back to the Thompson-Okanagan area for summer grass and finishing.

Although the Bulkley-Nechako region has a long feeding period, access to reasonably priced barley and relatively cheap abundant silage makes backgrounding well suited for the area. Operators in the region carry calves through the winter and onto pasture (for lighter animals obtained locally or from Williams Lake area) or directly into feedlots (for large exotic crosses common to the Bulkley-Nechako).

Peace River has advantages for backgrounding similar to those found in the Bulkley-Nechako. Dugouts are essential to ensure water, but forages and cheap cereals for silage and winter feeding are abundant.

iii) **Technical Comments:**

In the cow-calf and finisher sections (Section No's. III-D-4-a and III-D-4-c) of this report each region was analyzed, for its technical ability to support the respective operations.

Regional differences do exist for backgrounding, but due to its being either integrated into the cow-calf or finishing operation, the differences between regions have been highlighted in the tables that discuss cow-calf and finisher differences. The most attractive regions for backgrounding are those with the abundant feed to carry the animal through the winter. Bulkley-Nechako and the Peace, according to the study team review, seem to be best in B.C. Some technical points to keep in mind about backgrounding are summarized below.

Backgrounding requires high volumes of high quality forage for the winter feeding program. If the intent is to hold animals for transfer to grass the next spring, the animal would likely be held at 1.5 to 1.75 lbs. (.68 to .79 kg) ADG. An alternative is to aim for 2 to 2.5 lbs. (.91 to 1.13 kg) ADG and move the calves to a finishing feedlot in the spring. The latter alternative requires more forage and use of higher energy feed, but it has the advantage of bringing a feeder to market at a time when prices may be best.

Animals held back for spring grass need abundant, high quality range. Unless pasture is of high quality, yearlings will gain little. On forested ranges, it is essential that appropriate clearcut areas are seeded to suitable domestic forages. One management alternative for the producer, if suitable range is available, is to use intensive grazing systems. The decision on the suitability of the site will need to consider other users. If the intensive system requires fencing, riding or other management inputs, the land tenure must reward such investments.

The cow-calf producer, to carry a calf crop through backgrounding, must have the financial capacity. It will require at least 5-10 months of working capital. Once the producer has made it through one cycle a sustainable cashflow should ensure continued operation. Producers should have a computerized financial management system to track individual animals at different backgrounding or finishing facilities over a number of years.

To successfully background, producers find that use of silage rather than hay often is the best feeding regime. However, silage requires the operation be large enough to support the equipment needed. It may also require an investment in facilities. Because some B.C. summers result in poor forage production, due to drought, careful consideration needs to be given to the choice of hay or silage as feed for backgrounded animals. Often forage must be carried from one year to the next and the choice of forage (hay or silage) best able to carry the animals must be carefully decided.

A case for grazing calves in the fall, on extra irrigated forage, can be made for some south B.C. producers. The weaned calves can be grazed through December 1, then placed in a lot for winter feeding. Some industry leaders indicate that at least 2 lb. (.91 kg) ADG must be maintained to be profitable. As interest rates decrease this number will logically decline.

The producer of backgrounded cattle, needs to become market oriented as well as production oriented. The market is fast becoming global and costs in B .C. must meet those of other production regions. Therefore, before deciding to background the producer needs to examine cost components and relate them to future price expectations.

Off farm income has led producers away from backgrounding and value adding to calves. Many have the perception that outside income is superior to value adding through backgrounding where risk is often high.

The technical factors most required to support successful backgrounding include:

- Abundant low cost grazing areas and forage for wintering;
- Proper management dedicated to the care of cattle;
- Water of good quality for drinking available at reasonable price;
- Location where access to markets is not a problem;
- Financial backing to ensure that working capital requirements are met.

In each region reviewed; cattle of proper type; effective management; and financial resources can be obtained. Also, water to support drinking requirements and transportation to markets are not barriers in the regions studied. Therefore, the single most important determinant effecting a regions competitiveness to support backgrounding is the availability of feed. On this basis the northern regions of B.C., particularly the Peace are most competitive, but Alberta is equally competitive.

iv) **Cost Comparison:**

The costs to background calves is examined for the key methods of backgrounding -- "grasser" and "drylot". To develop the cost information the six regions of B.C., the Province of Alberta, and the U.S. pacific northwest were examined.

To make comparisons of costs between regions the first difference for each cost item in each region was measured against a base region. Alberta was chosen as the base region. Since relative differences between regions are the important measure, items of identical cost between regions are shown to be zero. The prices used in the analysis are for November 1991. Assuming relative price differences are similar between regions the time frame chosen does not affect comparative results. Results are shown less FFA. The impact of FFA is discussed under the government program analysis.

Calf purchase prices were assumed to be the same throughout B.C. The locational differences between calf purchase prices were difficult to specify given the range in the high and low auction prices. The average price was also unreliable since one pen of poor quality calves could skew the average price downward. A locational difference in the calf price of $2.00/cwt. (4.41 cents/kg) would amount to $10.00 per head gain or loss in the comparison.

- Drylot Comparison:

The cost differences for grain fed drylot backgrounding are presented in Tables III-10, III-10A, III-11, and III-11A. Set out in Tables III-10, and III-10A are the results when calf weights, and feeding periods are allowed to vary as reported in each region. Table 10A demonstrate results when barley silage costs in Alberta are increased from $18/ton to $33/ton. Set out in Tables III-11 and III-11A are the results when calf weights and feeding periods are held constant. Table III-11A again demonstrates results when barley silage costs in Alberta increase from $18/ton to $33/ton.

The results of the analysis presented in Table III-10 shows that the Fraser Valley and the southern interior are the least profitable areas to drylot background. This is largely because forage, barley and other feed costs are highest in these regions. Under these assumptions all other regions of B.C. show an advantage over Alberta, but this is because of heavier calves and a higher purchase price. It doesn't reflect the true cost differentials which favour Alberta.

Table III – 10: Grain Backgrounding With Regional Variables – Cost and Revenue Difference With Alberta

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	- Notes -
Feeding Period (Base 143 days)	Days	23	28	57	43	34	23	23	All BC reg. feed longer than Alb
Calf Weight (Base 550 lbs.)	lbs.	(40.00)	(50.00)	(100.00)	(75.00)	(60.00)	(40.00)	(40.00)	BC calves started lighter
FEED COST PER TON(NE):									
Barley	$/tonne	28.00	26.75	13.00	8.00	(6.00)	(4.00)	42.94	PNW barley most costly
Corn, Barley Sil.	$/ton	19.00	15.00	15.00	4.00	4.00	(3.00)	5.00	FV silage most costly
POUNDS FED PER DAY:	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All feed 28 lbs/day
DOLLAR DIFFERENCE:									
GROSS INC. - MARKETING	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All sold @ same wt & price
COST OF CALF									
Calf Purchase Cost	$/head	(40.00)	(50.00)	(100.00)	(75.00)	(60.00)	(40.00)	(40.00)	Lighter calves cost less
Shrink in	$/head	4.70	(0.50)	(1.00)	(0.75)	(0.60)	(0.40)	(0.40)	Distance adds cost
Trucking to Backgrounding Lot	$/head	5.98	2.00	1.25	(0.75)	(0.60)	(0.40)	2.15	Distance adds cost
TOTAL FEEDER COST	$/head	(29.32)	(48.50)	(99.75)	(76.50)	(61.20)	(40.80)	(38.25)	Most cost in Alb (heavier calf)
MARKET MARGIN	$/head	29.32	48.50	99.75	76.50	61.20	40.80	38.25	BC has more margin than Alb
FEEDING COST									
Barley	$/head	14.30	14.95	15.20	10.40	3.14	2.25	24.35	PNW has more cost
Corn, Barley Sil.	$/head	41.03	35.29	46.30	17.46	15.18	(0.97)	14.28	Kootenay has more cost
TOTAL FEED COSTS	$/head	55.33	50.24	61.50	27.85	18.32	1.28	38.66	All regions have more feed costs
DIRECT COSTS	$/head	54.33	49.24	60.50	28.85	20.32	3.28	37.53	All regions have more costs
GROSS MARGIN	$/head	(25.01)	(0.74)	39.25	47.65	40.88	37.52	0.72	Reg 1,2 have less revenue
Yardage	$/head	3.91	4.76	9.69	7.31	5.78	3.91	3.91	BC has more yardage
Interest	$/head	3.46	3.26	5.15	3.57	2.82	1.79	(3.78)	BC has more interest exp.
INDIRECT COSTS	$/head	7.37	8.02	14.84	10.88	8.60	5.70	0.13	BC has more indirect costs
TOTAL PROD. COSTS	$/head	61.70	57.26	75.35	39.73	28.92	8.99	37.66	BC costs are higher
TOTAL ALL COSTS	$/head	72.38	58.76	75.60	38.23	27.72	8.19	39.41	BC costs are higher
PROFIT	$/head	(32.38)	(8.76)	24.40	36.77	32.28	31.81	0.59	Reg 3-6, PNW make more mone
PROD. COST/CWT GAIN	$	14.59	11.01	7.69	1.05	(0.04)	(3.58)	6.31	Reg 1-4, PNW cost/cwt higher
TOTAL COST/CWT GAIN	$	16.59	9.48	4.28	(2.23)	(2.79)	(5.54)	5.23	Reg 1-3, PNW ttl cost/cwt higher

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

Table III–10A: Grain Backgrounding With Regional Variables – Cost and Revenue Difference With Alberta, $33/ton Silage

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	– Notes –
Feeding Period (Base 143 days)	Days	23	28	57	43	34	23	23	All BC reg. feed longer than Alb
Calf Weight (Base 550 lbs.)	lbs.	(40.00)	(50.00)	(100.00)	(75.00)	(60.00)	(40.00)	(40.00)	BC calves started lighter
FEED COST PER TON(NE):									
Barley	$/tonne	28.00	26.75	13.00	8.00	(6.00)	(4.00)	42.94	PNW barley most costly
Corn, Barley Sil.	$/ton	4.00	0.00	0.00	(11.00)	(11.00)	(18.00)	(10.00)	FV silage most costly
POUNDS FED PER DAY:	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All feed 28 lbs/day
DOLLAR DIFFERENCE:									
GROSS INC. – MARKETING	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All sold @ same wt & price
COST OF CALF									
Calf Purchase Cost	$/head	(40.00)	(50.00)	(100.00)	(75.00)	(60.00)	(40.00)	(40.00)	Lighter calves cost less
Shrink in	$/head	4.70	(0.50)	(1.00)	(0.75)	(0.60)	(0.40)	(0.40)	Distance adds cost
Trucking to Backgrounding Lot	$/head	5.98	2.00	1.25	(0.75)	(0.60)	(0.40)	2.15	Distance adds cost
TOTAL FEEDER COST	$/head	(29.32)	(48.50)	(99.75)	(76.50)	(61.20)	(40.80)	(38.25)	Most cost in Alb (heavier calf)
MARKET MARGIN	$/head	29.32	48.50	99.75	76.50	61.20	40.80	38.25	BC has more margin than Alb
FEEDING COST									
Barley	$/head	14.30	14.95	15.20	10.40	3.14	2.25	24.35	PNW has more cost
Corn, Barley Sil.	$/head	16.36	10.63	21.63	(7.21)	(9.49)	(25.63)	(10.36)	Kootenay has more cost
TOTAL FEED COSTS	$/head	30.66	25.57	36.84	3.19	(6.34)	(23.38)	13.99	Reg 1-4,PNW have more fd costs
DIRECT COSTS	$/head	29.66	24.57	35.84	4.19	(4.34)	(21.38)	12.86	Reg 1-4, PNW have more costs
GROSS MARGIN	$/head	(0.34)	23.93	63.91	72.31	65.54	62.18	25.39	Reg 1 have less revenue
Yardage	$/head	3.91	4.76	9.69	7.31	5.78	3.91	3.91	BC, PNW has more yardage
Interest	$/head	3.00	2.80	4.70	3.11	2.36	1.33	(4.24)	BC has more int. exp.
INDIRECT COSTS	$/head	6.91	7.56	14.39	10.42	8.14	5.24	(0.33)	BC has more indirect costs
TOTAL PROD. COSTS	$/head	36.57	32.13	50.22	14.61	3.80	(16.14)	12.54	Reg 1-5, PNW costs are higher
TOTAL ALL COSTS	$/head	47.25	33.63	50.47	13.11	2.60	(16.94)	14.29	Reg 1-5, PNW costs are higher
PROFIT	$/head	(7.25)	16.64	49.53	61.89	57.40	56.94	25.71	Reg 2-6,PNW make more money
PROD. COST/CWT GAIN	$	4.54	0.96	(2.36)	(9.00)	(10.09)	(13.63)	(3.74)	Reg 1-2 cost/cwt higher
TOTAL COST/CWT GAIN	$	6.54	(0.57)	(5.78)	(12.28)	(12.84)	(15.59)	(4.82)	Reg 1 total cost/cwt higher

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

Table III – 11: Grain Backgrounding With Equal Feeding Period & Weight – Cost & Revenue Difference With Alberta

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	- Notes -
Feeding Period	Days	0	0	0	0	0	0	0	All fed for 171 days
Calf Weight	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All start at 500 lbs.
FEED COST PER TON(NE):									
Barley	$/tonne	28.00	26.75	13.00	8.00	(6.00)	(4.00)	42.94	PNW barley most costly
Corn, Barley Sil.	$/ton	19.00	15.00	15.00	4.00	4.00	(3.00)	5.00	FV silage most costly
POUNDS FED PER DAY:	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All feed 28 lbs/day
DOLLAR DIFFERENCE:									
GROSS INC. – MARKETING	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All sold @ equal wt & price
COST OF CALF									
Calf Purchase Cost	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All bought @ equal wt & price
Shrink in	$/head	5.00	0.00	0.00	0.00	0.00	0.00	0.00	Distance adds cost
Trucking to Backgrounding Lot	$/head	6.25	2.50	2.50	0.00	0.00	0.00	2.50	Distance adds cost
TOTAL FEEDER COST	$/head	11.25	2.50	2.50	0.00	0.00	0.00	2.50	Most cost in FV (longer haul)
MARKET MARGIN	$/head	(11.25)	(2.50)	(2.50)	0.00	0.00	0.00	(2.50)	Reg 1-3 has less margin than Alb
FEEDING COST									
Barley	$/head	10.86	10.37	5.04	3.10	(2.33)	(1.55)	21.21	PNW has more cost
Corn, Barley Sil.	$/head	37.36	29.50	29.50	7.87	7.87	(5.90)	9.83	Reg 1-5,PNW has more cost
TOTAL FEED COSTS	$/head	48.22	39.87	34.54	10.97	5.54	(7.45)	31.05	Reg 1-5,PNW has more feed cost
DIRECT COSTS	$/head	47.22	38.87	33.54	11.97	7.54	(5.45)	29.92	Reg 1-5,PNW has more dir. cost
GROSS MARGIN	$/head	(58.47)	(41.37)	(36.04)	(11.97)	(7.54)	5.45	(32.42)	Reg 1-5,PNW has less revenue
Yardage	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All yardage equal @ $.17
Interest	$/head	1.57	1.00	0.88	0.24	0.12	(0.17)	(5.78)	Reg 1-5 has more int. exp.
INDIRECT COSTS	$/head	1.57	1.00	0.88	0.24	0.12	(0.17)	(5.78)	Reg 1-5 has more indirect costs
TOTAL PRODUCTION COSTS	$/head	48.80	39.87	34.42	12.21	7.66	(5.62)	24.14	Reg 1-5,PNW costs are higher
TOTAL ALL COSTS	$/head	60.05	42.37	36.92	12.21	7.66	(5.62)	26.64	Reg 1-5,PNW costs are higher
PROFIT	$/head	(60.05)	(42.37)	(36.92)	(12.21)	(7.66)	5.62	26.64	Peace, PNW made more money
PROD. COST/CWT GAIN	$	16.27	13.29	11.47	4.07	2.55	(1.87)	8.05	Peace had lower cost/cwt gain
TOTAL COST/CWT GAIN	$	20.02	14.12	12.31	4.07	2.55	(1.87)	8.88	Peace had lower cost/cwt gain

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

Table III – 11A: Grain Backgrounding With Equal Feeding Period & Weight – Cost & Revenue Difference With Alberta, $33/ton Silage

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	– Notes –
Feeding Period	Days	0	0	0	0	0	0	0	All fed for 171 days
Calf Weight	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All start at 500 lbs.
FEED COST PER TON(NE):									
Barley	$/tonne	28.00	26.75	13.00	8.00	(6.00)	(4.00)	42.94	PNW barley most costly
Corn, Barley Sil.	$/ton	4.00	0.00	0.00	(11.00)	(11.00)	(18.00)	(10.00)	FV silage most costly
POUNDS FED PER DAY:	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All feed 28 lbs/day
DOLLAR DIFFERENCE:									
GROSS INC. – MARKETING	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All sold @ equal wt & price
COST OF CALF									
Calf Purchase Cost	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All bought @ equal wt & price
Shrink in	$/head	5.00	0.00	0.00	0.00	0.00	0.00	0.00	Distance adds cost
Trucking to Backgrounding Lot	$/head	6.25	2.50	2.50	0.00	0.00	0.00	2.50	Distance adds cost
TOTAL FEEDER COST	$/head	11.25	2.50	2.50	0.00	0.00	0.00	2.50	Most cost in FV (longer haul)
MARKET MARGIN	$/head	(11.25)	(2.50)	(2.50)	0.00	0.00	0.00	(2.50)	Reg 1-3 has less margin than Alb
FEEDING COST									
Barley	$/head	10.86	10.37	5.04	3.10	(2.33)	(1.55)	21.21	PNW has more cost
Corn, Barley Sil.	$/head	7.87	0.00	0.00	(21.63)	(21.63)	(35.40)	(19.66)	Fraser Valley has more cost
TOTAL FEED COSTS	$/head	18.73	10.37	5.04	(18.53)	(23.96)	(36.95)	1.55	Reg 1-3,PNW has more feed cost
DIRECT COSTS	$/head	17.73	9.37	4.04	(17.53)	(21.96)	(34.95)	0.42	Reg 1-3,PNW has more dir. cost
GROSS MARGIN	$/head	(28.98)	(11.87)	(6.54)	17.53	21.96	34.95	(2.92)	Reg 1-3,PNW has less revenue
Yardage	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All yardage equal @ $.17
Interest	$/head	0.92	0.34	0.22	(0.41)	(0.53)	(0.82)	(6.43)	Reg 1-3 has more int. exp.
INDIRECT COSTS	$/head	0.92	0.34	0.22	(0.41)	(0.53)	(0.82)	(6.43)	Reg 1-3 has more indirect costs
TOTAL PRODUCTION COSTS	$/head	18.64	9.72	4.27	(17.94)	(22.49)	(35.77)	(6.01)	Reg 1-3,PNW costs are higher
TOTAL ALL COSTS	$/head	29.89	12.22	6.77	(17.94)	(22.49)	(35.77)	(3.51)	Reg 1-3,PNW costs are higher
PROFIT	$/head	(29.89)	(12.22)	(6.77)	17.94	22.49	35.77	3.51	Peace made more money
PROD. COST/CWT GAIN	$	6.21	3.24	1.42	(5.98)	(7.50)	(11.92)	(2.00)	Reg 4-6,PNW lower cost/cwt gn
TOTAL COST/CWT GAIN	$	9.96	4.07	2.26	(5.98)	(7.50)	(11.92)	(1.17)	Reg 4-6,PNW lower cost/cwt gn

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

The Fraser Valley is still least profitable in Table III-10A when the cost of barley is raised to $33/ton in Alberta. In both tables, the PNW indicates a disadvantage to northern B.C., but this is largely because barley is much more expensive in the U.S. If more wheat screenings and potato waste were used, the PNW would be much more competitive. Under the assumptions used in Tables III-10 and III-10A, Regions 4, 5, and 6 are the most competitive for drylot backgrounding of the B.C. regions.

The results set out in Tables III-11 and III-11A show Fraser Valley and the southern interior drylot backgrounders at a disadvantage. Also, when feeding periods and calf weights are held constant the Kootenay Region is at a disadvantage. In fact, with the exception of the Peace, all B.C. regions are at a disadvantage to Alberta drylot backgrounders in Table III-11. This analysis is a truer representation of the operating cost differentials that determine competitiveness between regions.

In Table III-11A, the cost of barley silage in Alberta is raised to $33/ton. With this new analysis, it still supports that Regions 4, 5, and 6 are the best regions to drylot background in B.C.; and the Peace is particularly competitive. As mentioned above, the advantage shown for the PNW is even greater by the fact that feed of local derivation is not being fully accounted.

In any event, the primary driver that will determine the success of a drylot backgrounder is the cost of grain. Feed cost accounts for more than 75% of the difference between regions. As shown later in the report, FFA helps to offset some of this difference between regions.

The nominal values used in the previous first difference tables are located in Appendices B1, B1-A, B2, and B2-A

- Grasser Comparison:

The cost differences for forage fed grasser backgrounding are presented in Tables III-12 and III-13. Set out in Table III-12 are the results when calf weights, and feeding periods are allowed to vary as reported in each region. Set out in Table III-13 are the results when calf weights and feeding periods are held constant.

The results of the analysis presented in Table III-12 shows that if forage is available in each region, the regions with the least profit potential are regions 5, 6 and 1. In fact, Region 5 and 6 seem to be at the greatest disadvantage and largely because of the larger calves and shorter feeding period to reach market weight, because feed in these regions is not higher cost and their production costs are nearly similar to other regions. In fact, production costs in the Peace are lower than in any other region. Even Alberta is at a disadvantage due to heavier calves.

Table III – 12: Grass Backgrounding With Regional Variables – Cost & Revenue Difference With Alberta

ASSUMPTIONS*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	-- Notes --
Feeding Period (Base 120 days)	Days	30	30	30	0	(20)	(20)	30	Reg 5-6 feed less than Alb
Calf Weight (Base 690 lbs.)	lbs.	(53.00)	(53.00)	(53.00)	0.00	35.00	35.00	(53.00)	Reg 5-6 calves started heavier
FEED COST:									
Forage Hay	AUM	5.00	0.00	1.00	(1.00)	0.00	(4.00)	3.00	FV & PNW hay most costly
POUNDS FED PER DAY:	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All consume 30 lbs/day
DOLLAR DIFFERENCE:									
GROSS INC. – MARKETING	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All sold @ same wt & price
COST OF CALF									
Calf Purchase Cost	$/head	(47.70)	(47.70)	(47.70)	0.00	31.50	31.50	(47.70)	Lighter calves cost less
Shrink in	$/head	5.26	(0.48)	(0.48)	0.00	0.32	0.32	(0.48)	Distance adds cost
Trucking to Grass	$/head	7.43	2.65	2.65	0.00	0.35	0.35	2.65	Distance adds cost
TOTAL FEEDER COST	$/head	(35.01)	(45.52)	(45.52)	0.00	32.16	32.16	(45.52)	Most cost in reg 5-6 (heavier)
MARKET MARGIN	$/head	35.01	45.52	45.52	0.00	(32.16)	(32.16)	45.52	Reg 5-6 has less margin than Alb
FEEDING COST									
Hay	$/head	37.00	12.00	17.00	(4.00)	(8.00)	(21.33)	27.00	Reg 1-3,PNW has most cost
TOTAL FEED COSTS	$/head	37.00	12.00	17.00	(4.00)	(8.00)	(21.33)	27.00	Reg 1-3,PNW have more costs
DIRECT COSTS	$/head	37.00	12.00	17.00	(4.00)	(8.00)	(21.33)	27.00	Reg 1-3,PNW have more costs
GROSS MARGIN	$/head	(1.99)	33.52	28.52	4.00	(24.16)	(10.83)	18.77	Reg 1,5-6,PNW have less revenu
INDIRECT COSTS	$/head	4.50	3.60	3.70	(0.06)	(2.70)	(2.87)	(2.55)	BC has more indirect costs
TOTAL PRODUCTION COSTS	$/head	41.50	15.60	20.70	(4.06)	(10.70)	(24.20)	24.45	Reg 1-3,PNW costs are higher
TOTAL ALL COSTS	$/head	54.19	17.78	22.88	(4.06)	(10.03)	(23.54)	26.63	Reg 1-3,PNW costs are higher
PROFIT	$/head	(6.49)	29.92	24.82	4.06	(21.47)	(7.56)	21.32	Reg 2-3,PNW make more money
PROD. COST/CWT GAIN	$	8.62	(1.23)	0.71	(1.93)	1.00	(6.72)	2.14	Reg 6 has least cost/cwt gain
TOTAL COST/CWT GAIN	$	10.24	(3.60)	(1.67)	(1.93)	4.55	(3.16)	(0.24)	Reg 2 has least cost/cwt gain

* Alberta is base from which differences are calculated.

Table III – 13: Grass Backgrounding With Equal Feeding Period & Weight – Cost & Revenue Difference With Alberta

ASSUMPTIONS*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okagn	Region 3 Kootenay	Region 4 Cariboo-Chilctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	-- Notes --
Feeding Period	Days	0	0	0	0	0	0	0	All fed for 120 days
Calf Weight	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All begin at 690 lbs.
FEED COST PER TON(NE):									
Forage Hay	AUM	5.00	0.00	1.00	(1.00)	0.00	(4.00)	3.00	FV hay most costly
POUNDS FED PER DAY:	lbs.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All consume 30 lbs/day
DOLLAR DIFFERENCE:									
GROSS INC. – MARKETING	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All sold @ equal wt & price
COST OF CALF									
Calf Purchase Cost	$/head	0.00	0.00	0.00	0.00	0.00	0.00	0.00	All bought @ equal wt & price
Shrink in	$/head	6.21	0.00	0.00	0.00	0.00	0.00	0.00	Distance adds cost
Trucking to Grass	$/head	8.63	3.45	3.45	0.00	0.00	0.00	3.45	Distance adds cost
TOTAL FEEDER COST	$/head	14.84	3.45	3.45	0.00	0.00	0.00	3.45	Most cost in FV (longer haul)
MARKET MARGIN	$/head	(14.84)	(3.45)	(3.45)	0.00	0.00	0.00	(3.45)	Reg 1-3 has less margin than Alb
FEEDING COST									
Hay	$/head	20.00	0.00	4.00	(4.00)	0.00	(16.00)	12.00	FV, PNW most costly
TOTAL FEED COSTS	$/head	20.00	0.00	4.00	(4.00)	0.00	(16.00)	12.00	FV, PNW most costly
DIRECT COSTS	$/head	20.00	0.00	4.00	(4.00)	0.00	(16.00)	12.00	Reg 1-5,PNW has more dir. cost
GROSS MARGIN	$/head	(34.84)	(3.45)	(7.45)	4.00	0.00	16.00	(15.45)	Reg 1-3,PNW has less revenue
INDIRECT COSTS	$/head	0.78	0.11	0.17	(0.06)	0.00	(0.25)	(5.20)	Reg 1-3 has more indirect costs
TOTAL PRODUCTION COSTS	$/head	20.78	0.11	4.17	(4.06)	0.00	(16.25)	6.80	Reg 1-3,PNW costs are higher
TOTAL COSTS	$/head	35.61	3.56	7.62	(4.06)	0.00	(16.25)	10.25	Reg 1-3,PNW costs are higher
PROFIT	$/head	(35.61)	(3.56)	(7.62)	4.06	0.00	16.25	(10.25)	Peace made more money
PROD. COST/CWT GAIN	$	9.89	0.05	1.99	(1.93)	0.00	(7.74)	3.24	Peace had lower cost/cwt gain
TOTAL COST/CWT GAIN	$	16.96	1.69	3.63	(1.93)	0.00	(7.74)	4.88	Peace had lower cost/cwt gain

* Alberta is base from which differences are calculated.

The most profitable regions if grass and forage are available are the southern interior Kootenays and the PNW. This is almost opposite of what the drylot backgrounding analysis showed and reflects the advantage of a longer feeding period and lighter calves to start. Overall, considering weights, feeding period and production costs, Fraser Valley remains the least competitive region in which to background.

The results shown in Table III-11 are similar to the results shown when backgrounding is done totally on grain. It shows that the Fraser Valley is the least competitive area to background on forage and grass followed by PNW, Kootenays and the southern interior. This is largely because forage is higher cost in these regions. The most competitive region to background on forage is the Peace. Alberta, Cariboo and Bulkley are all nearly equal in terms of cost to background on forage and are slightly less attractive than the Peace. This analysis of grasser backgrounding provides a truer picture of each regions competitiveness than when weights and feeding periods are allowed to vary, because it measures more accurately the production cost advantage or disadvantage.

In any event, the primary driver that determines the success of grasser backgrounding is the cost of forage and grass. Feed cost accounts for the majority of the total production cost/up to 75% in some regions) difference between regions.

- Drylot/Grasser Combination Comparison:

In many cases backgrounding is not totally drylot or grasser, but some combination of both. Therefore, a difference in analysis of this situation was prepared and the results are shown below:

Fraser Valley Region 1	South Int. Region 2	Kootenay Region 3	Cariboo Region 4	Bulkley Region 5	Peace River Region 6	Alberta	PNW
(77.42)	(63.82)	(79.59)	(48.86)	(9.64)	8.28	0.00	(5.16)

In this analysis Fraser Valley, Bulkley, Peace and Alberta do not return drylot backgrounded cattle to grass. In the regions of Southern Interior, Kootenay, Cariboo and PNW backgrounded cattle were returned to grass to finish them to 900 lbs. (408 kg). Cost comparisons include a combination of the two operations (drylot plus grassing).

The results of the analysis confirm that the Fraser Valley, the Southern Interior, and Kootenays are least cost competitive regions for backgrounding. The Peace is the most cost competitive region and Bulkley, Alberta and PNW are all reasonably competitive. Again, the driving factor is the differential feed cost between regions.

Results of the total cost analysis show that backgrounding is least competitive in Fraser Valley and most competitive in the Peace. It also shows that it is dangerous to generalize because circumstances can exist in each region that support backgrounding. However, when deciding on government policy support for backgrounding the choice of policy should relate to the broad based conclusion and not the special circumstance.

c) *Finishing*

i) *Introduction*

There were approximately 27,848,000 steers and heifers finished in feedlots during 1990 in North America (not counting Mexico). In the U.S., 22,429,000 were finished in the 13 highest beef producing states. In Canada, 2,118,000 were finished. Of these, 1,187,238 steers and heifers were finished in Alberta and 47,091 steers and heifers were finished in British Columbia. The U.S. Northwest states of Washington and Idaho (PNW) finished 1,061,000 during the same period.

In December 1990, 57,086 head of cattle were in feedlots in British Columbia (see Table III-14). Of these, only 16,364 head, or 28.7% were 800+ lbs. (363+ kg). The other 40,722 were below 800 lbs. (363 kg). (Some of these backgrounding cattle that were below 800 lbs. (363 kg) eventually finished in Alberta.) In March 1991, 39,904 head were in feedlots. These included 22,688 head that were 800+ lbs. (363+ kg) The percent of 800+ lbs. (363+ kg) total had grown to 56.9.

In October, 1991 the number of head in B.C. feedlots had grown to 45,855 head. This was an increase over 1990, but only slightly higher than the number of 1989. The increase in 1981 apparently reflects the softer market for feeders in Alberta and the PNW.

The finishing sector is a vital link of the intricate beef production cycle. The finisher can make a profit by either; purchasing cattle inexpensively; selling at a high market; and at the same time, keeping costs down. When the feeder is bid-up too high, the cow-calf operator or backgrounder makes profit, and the finisher bids profit away. When the slaughter house is forced to lower the asking price for finished beef because the retail stores can buy beef elsewhere for less cost, the finisher then does not get paid enough to make a profit. Other times, the price of barley or silage will increase to a level where feed costs take away profits. These three forces squeeze profits from the inefficient or uncompetitive finisher.

Table III – 14: Total Number of Cattle in British Columbia Feedlots

Region	Capacity	Sept. '89	Oct. '89	Dec. '89	Mar. '90	June '90	Sept. '90	Oct. '90	Dec. '90	Mar. '91	June '91	Sept. '91	Oct. '91
Total Feedlot Cattle:													
Mainland/Southwest	15,800	9,439	9,974	9,311	9,022	6,522	5,271	7,922	7,763	9,414	6,843	5,115	7,483
Thompson/Okanagan	55,745	7,379	26,104	40,401	27,973	4,245	6,864	22,276	40,221	24,096	5,518	8,445	30,800
Kootenay	2,845	194	1,664	2,342	1,783	118	125	5	2,098	1,561	857	523	1,629
Cariboo-Chilcotin	3,025	0	1,325	1,835	1,496	0	81	1,332	1,912	1,636	0	177	1,676
Bulkley-Nechako	2,380	230	1,372	1,990	1,423	0	101	1,647	1,942	1,747	765	208	1,967
Peace River	4,400	983	2,925	3,050	1,850	0	550	2,330	3,150	1,450	500	520	2,300
Totals	84,195	18,225	43,364	58,929	43,547	10,885	12,992	35,512	57,086	39,904	14,483	14,988	45,855
Number of Head 800+ lbs:													
Mainland/Southwest		8,270	8,856	7,573	7,792	5,269	4,134	6,639	6,140	7,746	5,903	3,130	5,237
Thompson/Okanagan		5,665	7,289	8,825	14,795	3,996	3,998	4,864	9,753	12,623	4,958	6,026	13,209
Kootenay		112	177	182	312	8	118	0	15	933	857	490	244
Cariboo-Chilcotin		0	75	430	1,032	0	0	8	446	1,061	0	0	448
Bulkley-Nechako		148	108	122	210	0	42	576	10	325	160	38	378
Peace River		0	0	0	0	0	0	0	0	0	500	0	250
Totals		14,195	16,505	17,132	24,141	9,273	8,292	12,087	16,364	22,688	12,378	9,684	19,766
Number of Head 800- lbs:													
Mainland/Southwest		1,082	1,118	1,738	1,230	1,253	1,137	1,283	1,623	1,668	940	1,985	2,246
Thompson/Okanagan		1,714	18,815	31,576	13,178	249	2,866	17,412	30,468	11,473	560	2,419	17,591
Kootenay		82	1,487	2,160	1,471	110	7	5	2,083	628	0	33	1,385
Cariboo-Chilcotin		0	1,250	1,405	464	0	81	1,324	1,466	575	0	177	1,228
Bulkley-Nechako		82	1,264	1,868	1,213	0	59	1,071	1,932	1,422	605	170	1,589
Peace River		983	2,925	3,050	1,850	0	550	2,330	3,150	1,450	0	520	2,050
Totals		3,943	26,859	41,797	19,406	1,612	4,700	23,425	40,722	17,216	2,105	5,304	26,089

Source: B.C. Ministry of Agriculture & Fisheries Animal Health Branch – Field Brand Inspection Feedlot Survey

ii) *Introduction to B.C., Alberta, and Washington*

British Columbia's beef industry is integrated with the neighboring province of Alberta and PNW. Calves and feeder cattle from British Columbia are purchased by feeders in Alberta and PNW.

Cattle that finish in B.C. are generally calves born in B.C. However, substantial numbers of B.C. finished cattle are slaughtered at High River, Lethbridge, and Edmonton, Alberta; and Pasco, Washington. According to Agriculture Canada data, during 1990, 11,561 head of B.C. cattle were slaughtered in Alberta slaughter facilities. Of the 12,200 head of feeder and slaughter cattle exported to the U.S. from B.C., the majority were likely slaughtered at Pasco, Washington.

B.C.'s retail beef market is also influenced by Alberta and Washington. Primal and retail cuts of beef are sent to B.C.'s Safeway Food Stores from the Lucerne Meat facility in Calgary, Alberta. No-roll beef from Washington packers and other packers in the U.S. is imported into B.C. The purchasers of this beef do so over local B.C. beef because price and quality meets the consumer's needs and local beef can only supply 25-30% of the demand. Another variable in the importation of non-B.C. beef is the consumer's inability to identify beef according to its origin; provided origin and/or grade labeling is not done in the retail store.

iii) *Regional Comparisons within B.C.*

1. **Technical**

British Columbia is the most diverse geographical and climatological province of Canada. Because of this diversity, the different regions within the province contain and present different characteristics that lead to variations in competitiveness in the production of beef. A detailed review of the key technological features between regions helps to show strengths and weaknesses of each (Table III-15).

The traditional and continuing locations of commercial cattle finishing in B.C. are the Thompson-Okanagan regions and the Fraser Valley. The Okanagan and Thompson Valley regions contain 66.2% of feedlot capacity and a December high of 70.4% of feedlot operations during the winter feeding of 1990-91. The Thompson-Okanagan contain some of the oldest cattle operations in western Canada. The dry climate and mild winters in this region are desirable for cattle production. Climate combined with provincial crownland and irrigation made forage and feed for cattle readily available.

The second largest feedlot region is the Fraser Valley with 18.8% of capacity. The Fraser Valley contains the advantage of proximity to the consuming market of Vancouver. Cattle feeders in this area raised cattle with capital intensive feeding programs.

Table III – 15: Technical Comparison of Cattle Finishing in British Columbia Regions, 1991

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo-Chilcotin	Region 5 Bulkley-Nechako	Region 6 Peace River
A. Description of Operation	This region accounts for 23% of finishing. Cattle are predominately housed in covered barns. Operations characterized by high overhead and real estate costs. With urbanization of Valley, opportunity costs are high due to land value, particularly for those operations near Vancouver that can sell land for other than agricultural use.	The Okanagan and Thompson regions contain 51% of all finishing feedlots. Physical layout of feedlots are open air with large pens. Equipment and protein feed storage facilities contained on the ranch. Characterized by dry, almost desert like climate. Feeding costs pressured upward by significant dairy industry.	Region contains 11% of finishing feedlots. Feedlots similar to the open air lots in the southern interior. However, the climate is less dry than the southern interior. Surveys indicate that most feedlots in this region are in the backgrounding phase of feeding.	Accounts for 7% of finishing operations. Region is predominately cow/calf and backgrounding.	Accounts for 5% of finishing operations. Region is predominately cow/calf and back-grounding. Physical layout of feedlots is open air lots with feed bunks and packs in the center of each pen.	Accounts for 3% of finishing operations. Region is east of the Continental Divide (Rocky Mountains) and is logistically an extension of northwest Alberta. Marketing patterns are directed toward Alberta. Physical layout of feedlots is open air.
B. Technology						
- Availability of Proper Feed	Corn silage and hay are the largest ingredient input in feed rations. Both are grown on farm or purchased locally within the Valley. Wheat screenings are railed in and purchased locally. Region is net importer and dependent on outside barley.	Corn silage and hay grown in irrigated valleys. Barley is the major purchased feed grain ingredient, however, 5,200 acres (2,100 ha) of barely are grown in this region. The majority is in the North Okanagan. Region is a net importer of barley.	Alfalfa hay and barley silage grown in irrigated valleys. 3,000 acres (1,250 ha) of barley are grown. Region is a net importer of barley.	Alfalfa hay and cereal silage is grown locally. A little corn silage is grown in irrigated valleys. Barley is the major purchased feed grain ingredient. It is railed and trucked from praire Provinces and Peace River.	Forages such as alfalfa are grown locally. Barley must be imported from praires. 10,000 (4,000 ha) acres of barley is grown locally. Barley is used in the finishing sector.	Barley and hay grown locally. 134,000 acres (54,000 ha) of land is in barley, therefore, most barley for finishing can be obtained within the region.
- Abundant Good Water	Drawn from wells. Added electricity costs from pumping. Ample supply.	Drawn from mountain streams, springs, and some wells. Water pressure generated from	Surface water from mountain streams and springs. Some wells. Water pressure generated	Most is sourced from streams, lakes and ponds. Some well water is needed where surface	Water is extracted from deep wells. Costs incurred for electricity to pump water. Little	Surface water is used for watering. Some wells have been drilled but the water is hard. Snow is

Table III – 15: Technical Comparison of Cattle Finishing in British Columbia Regions, 1991

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
		gravity where possible. Purchased from water district. Ample supply. Heated water bowls keep the water ice free during the winter.	from gravity where possible. Ample supply. Heated water bowls keep the water ice free during the winter.	water is unavailable. Heated water bowls keep the water ice free during the winter.	surface water is used since it is not readily available. Heated water bowls keep the water ice free during the winter.	eaten during the winter. Some automatic waterers are used. Some costs are incurred from electricity to pump water and heat tanks to keep ice free during the winter.
- Proximity to Feeder Cattle	Must be transported from distances of 350–400 km. Originate from all regions in BC. Some Alberta calves purchased to fill lots if calves are not available in spring in BC.	Local cow/calf operations, and some must be transported 200 km from Cariboo and/or Bulkley. Lots are filled in the late summer, early fall.	Local cow/calf operations. Most of area calves go to Alberta, 320 km to the east.	Feeders are grown locally. Some may come from Kamloops or Nechako depending on demand for the year from Alberta and PNW.	Feeders are grown locally. Price reflects demand from Alberta, PNW and lower BC.	Calves raised locally. Some may come from the Nechako region.
- Proximity to Slaughter/Packing Facility	Kill plants located within 30 km in the Fraser Valley (Surrey). Well located to serve key packer, J&L.	Transported to kill plants in Fraser Valley, Pasco WA, or Alberta. South Okanagan cattle generally sent to Pasco, WA.	Transported to kill plants at High River and Lethbrigde, Alberta.	Recently, majority transported to kill plant in Pasco, WA. A few medium weight feeders go to Alberta to be finished out on high barley rations (less transportation costs).	Transported to kill plants in Alberta. Freight costs are not much greater than to the Fraser Valley and producers have said to receive a higher price.	Finished steers taken to local kill plants in Dawson Creek or shipped to Edmonton.
- Climatic Conditions	Warm wet summers, wet mild winters. Not particularly condusive to least cost finishing.	Hot dry summers (desert conditions), moderately cold winters. Favor finishing as long as feed in available.	Hot to warm summers, moderately cold winters. Acceptable as a feeding area with adequate feed.	Warm dry summers, cold winters. Low temperatures of –30 to –40 degrees C.	Warm dry summers, cold winters. Low temperatures of –40 degrees C.	Hot to warm summers. Bitter cold winters.
- Environmental Factors	Manure runoff into drainage ditches,	Manure runoff into rivers that feed into Lakes.	Manure runoff into ditches and rivers that	Less urban restrictions compared to lower BC	Flat topography and little surface water makes	Less urban restrictions compared to lower BC

Table III – 15: Technical Comparison of Cattle Finishing in British Columbia Regions, 1991

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
	ammonia odors, general concerns arising from urban encroachment. Manure can only be spread during spring. Cattle no longer permitted to drink from open streams.	Problems generally encountered with smaller operators. Urbanization of Okanagan has created greater concerns for proper disposal of human and animal waste. Environmental issues could become a barrier to expanded feeding in region.	feed into Lakes. However, no concerns by operators at present time. With adequate feed, expansion could occur in this region.	areas. Feedlots (manure) must be at least 100 meters from moving water. Feedlot expansion could occur in this region.	manure runoff less of a problem in region. Manure is put on fields to build up organic matter.	areas. Standard practice of avoiding manure runoff into ditches and streams mandated by Environment Ministry.
– Nutritional Support Services	Nutritional supplements readily available from vendors. Capital intensive facilities used to store feed ingredients. FFA for This region is $11/MT.	Nutritional supplements readily available from local vendors. Protein (barley) transported from Alberta. Barley cost is lessened through FFA. FFA for this region is $4.50/MT in the Thompson and N. Okanagan Valleys and $11.50/MT in the South Okanagan Valley.	Nutritional supplements readily available from Alberta. Barley transported from Alberta. FFA for this region is $4.50/MT.	Nutritional supplements readily available. Region is an importer of feed. FFA for the area is $18/MT.	Nutritional supplements readily available. Protein (barley) transported from Alberta. Barley FFA (Feed Freight Assistance) is $5, 11, &. 20/MT depending on the FFA zone in this region.	Not as well serviced as lower BC or Alberta, but can be obtained. Energy (barley) is grown locally. No FFA is provided for grain transportation.
– Shelter, Facility Requirements, Drainage	Most all operations in Fraser Valley have cattle under shelter. Manure stored under roof for spreading in spring or for sale. Facilities represent a higher cost in this region.	No permanent shelter for cattle. Feed ingredient storage, farm equipment and tool barn generally in good repair. Shelter competitive with Alberta or PNW though overall size of lots are smaller.	No permanent shelter for cattle. Feed ingredient storage, farm equipment and tool barn generally in good repair. Shelter competitive with Alberta or PNW though overall size of lots are smaller.	Wind breaks and packs provide the only shelter. Feed ingredient storage, farm equipment and tool barn generally in good repair. Shelter is cost competitive with other Alberta and PNW.	No enclosed shelter for cattle. Wind breaks used. Feed ingredient storage, farm equipment and tool barn generally in good repair. Cold weather wind breaks are an added cost.	Wind breaks and open front sheds provided to protect feeder cattle against cold weather during the winter. Wind breaks are an added cost.

Table III – 15: Technical Comparison of Cattle Finishing in British Columbia Regions, 1991

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
– Feed Manufacturing Capability	On farm mixing and blending available to some, custom feed companies supply to others. Significant investment for those who want on farm facilities. High quality feed manufacturing is a positive affect for the cattle industry.	Barley transported from Alberta and blended at feedlot. Feed mills provide custom feed but are great distances for some operators. The availability of quality feed is a positive affect competitively for the region.	Barley transported from Alberta and rolled at feedlot. Not a lot of high quality feed manufacturing in this region.	Barley transported from Alberta and rolled at feedlot. Feed mills can provide custom feed but are located in the Okanagan or Fraser Valley.	Barley transported from Alberta or The Peace region and rolled and/or blended at the feedlot. Feed mills are great distances from operators in this region.	Local feed manufacturing companies offers dry roller and grinding services.
– Scale Economies and Size of Feedlots	Largest lots feed 5,000 head per year. These lots are out of direct competition with Alberta and PNW yards, but they are small by North American averages.	Considered a large feedlot if 3,000 – 5,000 head are fed. This compares to 40,000+ in Alberta and 55,000+ in PNW. Labour is provided by owner/operator, family members and/or hired labour.	No sizeable finishing operation in this region. Scale was not able to be determined.	Largest lot has 800 head but these move to Alberta as medium weight feeders and finish out in Alberta. Largest finishing lots have 200 to 300 head of cattle. Most of these yards are mainly backgrounders.	Largest lot has 800 head. Smaller lots have around 500 head. Most of these yards are mainly backgrounders.	Largest feedlot has 2,000 head.
– Utilization of Feedlot	Year round. Barns are full since weather and seasons have minimal affect on decisions when to feed; and feeders need to keep a steady supply of fat cattle to J & L Slaughter facility.	In majority of operations, feedlots are empty most of summer (no alternative uses identified). Finishing cattle enter lots during late summer, early fall.	Feedlots are empty most of summer (no alternative uses identified). Cattle enter lots during late summer, early fall.	Feedlots are empty during the summer (no alternative uses identified). Finishing cattle enter lots during late summer, early fall.	Feedlots are empty during the summer (no alternative uses identified). Last cattle leave around June 1st. Backgrounded or finishing cattle enter lots around October 1st.	Feeding operations geared toward cow/calf. Those who feed cattle increase capacity when prices dictate a profit. Lots empty during the summer.

Table III – 15: Technical Comparison of Cattle Finishing in British Columbia Regions, 1991

Topic	Region 1 Fraser Valley	Region 2 Southern Interior	Region 3 Kootenay	Region 4 Cariboo–Chilcotin	Region 5 Bulkley–Nechako	Region 6 Peace River
C. Opportunities						
– To Improve Feeding/Seek Forage Alternatives	More efficient feed conversions from better quality hay and silage.	More efficient feed conversions from better quality hay and silage.	More efficient feed conversions from better quality hay and silage.	More efficient feed conversions from better quality hay and silage.	More efficient feed conversions from better quality hay and silage.	More efficient feed conversions from better quality hay and silage.
– To Meet Environmental Requirements	Work with Ministry of Environment and BCMAFF on prevention and correction of potential and present problems.	Work with Ministry of Environment and BCMAFF to prevent future runoff of waste into the Okanagon watershed.	Work with Ministry of Environment and BCMAFF to prevent future runoff of waste into the Kootenay watershed and Columbia River watershed.	Work with Ministry of Environment and BCMAFF to prevent runoff of waste into surface streams or bodies of water.	Follow and/or implement guidelines prescribed by Ministry of Environment. More time to change practices since urban centers do not exist.	Follow and/or implement guidelines prescribed by Ministry of Environment. More time to change practices since urban centers do not exist.
– To Improve Nutrition	Use new and improved growth ingredients.	Use new and improved growth ingredients.	Use new and improved growth ingredients.	Use new and improved growth ingredients.	Use new and improved growth ingredients.	Monitor feed performance from locally grown inputs.
– To Improve Feed to Gain Ratios	More precision in feed rations through use of computer based blending models.	More precision in feed rations through use of computer based blending models.	More precision in feed rations through use of computer based blending models.	More precision in feed rations using computers. Generally a good job done considering costs of feed.	More precision in feed rations through use of computer based blending models.	Refine the least costly yet most efficient feed formula. Greater use of growth implants
– Other	Greater revenues and expanded business opportunities from manure sales to horticultural and residential customers.	Manure sales to ochards and vegetable growers. This region's finishing sector is competitive technologically with Alberta and the PNW. The economics of location is what affects this region's competitiveness.			Expansion of smaller herds from 200 to 1,000 head. Manure and other organic matter must go back to the soil in order to build up the organic matter from the present 2–3% to 8–10%	This region is as competitive from a technical stand as the rest of BC and Alberta.

Profits were generated from the ability to: 1) feed cattle year round, 2) produce corn silage and hay efficiently, and 3) have negligible transportation costs taking the finished cattle to slaughter. These three factors combined with Feed Freight Assistance for barley transported into the region made cattle production in the Fraser Valley profitable.

The other four regions contain farmer-finishers who generally feed their own cattle. They also contain cattle that are below 800 lbs. and would be characterized as backgrounding operations. However, some cattle are finished using production from vertically integrated cow-calf operations. The Kootenay area accounts for 3.3% of feedlot capacity. The Cariboo-Chilcotin, Bulkley-Nechako, and Peace River regions contained only 3.6%, 2.8%, and 5.2% respectively of the province's feedlot capacity. The previous percentages bear-out that the current finishing industry capacity is concentrated in the lower part of the province.

The largest commercial finishing lot in British Columbia produces 5,000 head of cattle a year. This compares to 40,000+ head of cattle in the largest Alberta feedlot. The largest feedlot in Washington has 55,000+ head of cattle. Thus, the largest finishers in Alberta and Washington state finish eight and eleven times the number of cattle as the largest feedlot in B.C. This size advantage permits these operators to spread fixed costs over more cattle, thus reducing average total costs, provided feeder calves are available to fill the lots.

However, expansion for B.C. operators may not be an alternative if the costs of such endeavour is greater than the net present value of the reduction in costs. It is probably impractical for B.C. to consider feedyards of the scale found in Alberta or Washington because the feeder calves are not available to supply such a yard without major expansion of cow-calf herds. There are only 230,000 calves currently produced in B.C. In addition, most of B.C.'s feedlots during the winter feeding season of 1991-92 were backgrounding a larger percentage of cattle than were finishing.

B.C. feedlots with 1,000 or more head are custom feeding operations. The feeders are owned by investors or other farmers who have the feedlot custom finish their feeders. Calves and yearlings enter the finishing lots between 700 and 800 lbs. (318 and 363 kg).

Operators in the northern regions of B.C. purchase feeder cattle locally since this is where the majority of cow-calf operations exist. Buyers from Alberta, U.S., and lower B.C. also bid for these calves, thus establishing a regional market for these calves. The demand generates a higher purchase price which directly reduces net revenues for B.C finishers because the purchase price of the cattle is the largest cost to the finisher.

B.C. finished cattle are slaughtered in the Fraser Valley, High River and Lethbridge, Alberta, Yakima and Pasco, Washington. The majority of finished steers in the Fraser Valley and the

Thompson-Okanagan Valley are slaughtered in the Fraser Valley. However, finishers in the Okanagan will send cattle to Alberta or Washington depending on the highest net price after subtracting freight costs. Cattle finished in the northern regions and Kootenays will also market finished cattle in Alberta or Washington.

Finishers in British Columbia must transport feed to the finishing cattle on a continual basis. The producer in Alberta is in a grain surplus region so he or she has fewer freight costs once the animal is put in the lot. Even with FFA, the B.C. producer can not reduce the periodic feed costs to less than the one time freight cost to transport the B.C. feeder calf to the Alberta or PNW feedlot. In simple terms, it is less costly to take the feeder (one time) to the feed, than to bring over 1,700 lbs. (771 kg) of barley feed (numerous times) to the animal.

2. Costs

Changes in technology and production efficiencies have changed the advantages of the traditional finishing areas. Advances in transportation and modernization in infrastructure have made the location of the calves and feed the more important element in the profitability of finishing cattle, rather than the location of the consumer.

The Federal Government program of Feed Freight Assistance lowers the cost of barley for the feedlot beef steer. The purpose of FFA is to enable the B.C. producer to pay close to the same price for barley in B.C. as the Alberta operator pays for locally grown barley. This payment also raises the value of barley grown in B.C. since the purchaser of local barley receives the payment at point of destination (regardless of where it originated). The FFA is capitalized into the price of the local barley so the livestock producer does not receive the benefit of lower transportation costs in locally grown barley. For the barley farmer who sells his barley and also raises beef cattle, this payment creates a competitive advantage when he then purchased Alberta barley with FFA for his own cattle.

The cost of inputs are more expensive in B.C. than Alberta or the PNW. Though feed costs are reduced by Feed Freight Assistance, overall inputs for the finishing sector are more expensive in British Columbia than in Alberta. This situation occurs for different reasons. Labour, transportation (fuel and terrain), real estate, and other factors add to an overall higher price level for the B.C. finisher. These added costs result in lower net revenues and a disadvantage in competitiveness. Lower costs enable Alberta and PNW finishers to bid for and transport calves from B.C. to finish in the respective province or state.

This cost analysis examined the relative difference between the six regions of B.C., the province of Alberta, and the PNW to identify cost comparisons. The methodology is similar to described earlier for cow-calf and backgrounding.

Bid prices at the slaughter facilities were assumed to be the same in B.C., Alberta, and Pasco, after adjusting for currency exchange rates. The identical price assumption is further strengthened since Alberta and B.C. finishers will market cattle to Pasco when the U.S. price is greater than the B.C. or Alberta price. In this event, the Alberta and B.C. finisher will still get the same price as the PNW finisher less freight. (The Thompson-Okanagan finisher does not pay much more in freight anyway.) Thus, the identical price assumption holds.

The results of the cost differences are presented in Table III-16. The analysis shows that Fraser Valley producers have a cost of gain that is over $5.91/cwt. (13.03 cents/kg) more than the Alberta producer. Also significant is the fact that as Cariboo, Bulkley-Nechako and/or Peace finisher had costs of grain per cwt which were up to $9.00/cwt (19.84 cents/kg) less than in the Fraser Valley.

The corresponding profit (loss) per head reveals that the Fraser Valley finisher netted over $28.54 less per head than the Alberta finisher. Also of note is that the fact that the Southern Interior and netted over $36 less than Alberta; the Kootenay, Cariboo, and Bulkley-Nechako regions netted $21 to $25 per head less than Alberta. The Peace region netted $30 less per head than the Alberta producer. The PNW finisher netted $17 more per head than the Alberta finisher.

Table III-16: British Columbia Beef Feedlot Finishing, Costs and Revenues First Difference From Alberta

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okagn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	- Notes -
FEED COST PER TON(NE):									
Barley	$/tonne	20.00	18.75	5.00	0.00	(14.00)	(12.00)	39.54	PNW most costly
Corn, Barley Sil.	$/ton	19.00	15.00	15.00	4.00	4.00	(3.00)	5.00	Fraser Valley most costly
Wheat Scrn, Potato Waste	$/tonne	86.00	0.00	0.00	0.00	0.00	0.00	10.34	FV, PNW only regions fed
POUNDS FED PER DAY:									
Barley	lbs/hd/day	(6.00)	(2.00)	(2.00)	(2.00)	(2.00)	0.00	(7.00)	( ) less lbs fed than Alberta
Corn, Barley Sil.	lbs/hd/day	0.40	4.00	4.00	4.00	4.00	0.00	(8.00)	Most lbs/head fed in BC
Wheat Scrn, Potato Waste	lbs/hd/day	5.60	0.00	0.00	0.00	0.00	0.00	15.00	FV, PNW only regions fed
DOLLAR DIFFERENCE:									
Marketing Shrink	$/head	0.00	12.96	12.96	12.96	12.96	12.96	(25.91)	Reg 2-6 far from kill plants
Trucking	$/head	(8.47)	11.29	11.29	14.11	19.76	12.42	(5.65)	Distance adds cost
GROSS INC. - MARKETING	$/head	5.92	(26.80)	(26.80)	(29.62)	(35.26)	(27.92)	31.76	Most gross inc. in PNW
COST OF FEEDER CALF									
Shrink in	$/head	7.00	0.00	3.50	0.00	0.00	3.50	7.00	Distance adds cost
Trucking to Feedlot	$/head	8.00	(4.00)	(2.00)	(4.00)	(4.00)	8.00	8.00	Distance adds cost
TOTAL FEEDER COST	$/head	15.00	(4.00)	1.50	(4.00)	(4.00)	11.50	15.00	Most cost in FV & PNW
MARKET MARGIN	$/head	(9.08)	(22.80)	(28.30)	(25.62)	(31.26)	(39.42)	16.76	BC has less margin than Alb
FEEDING COST									
Barley	$/head	(8.53)	7.57	(2.98)	(6.82)	(17.57)	(10.23)	4.82	Region 2 has more cost
Corn, Barley Sil.	$/head	7.84	11.84	11.84	5.64	5.64	(1.13)	(6.77)	PNW & Reg 6 has less cost
Wheat Scrn, Potato Waste	$/head	20.53	0.00	0.00	0.00	0.00	0.00	7.29	FV & PNW only feeders
TOTAL FEED COSTS	$/head	19.85	19.41	8.86	(1.18)	(11.93)	(11.36)	5.34	Reg 1-3, PNW more costly
DIRECT COSTS	$/head	18.85	18.41	7.86	(0.18)	(9.93)	(9.36)	4.22	Reg 1-3, PNW more costly
GROSS MARGIN	$/head	(27.93)	(41.21)	(36.15)	(25.44)	(21.34)	(30.06)	12.54	BC has less revenue
Interest	$/head	0.61	0.14	0.15	(0.11)	(0.24)	0.14	(4.57)	Reg 1-3,6 more int. exp.
TOTAL PRODUCTION COSTS	$/head	19.46	18.55	8.00	(0.29)	(10.17)	(9.22)	(0.36)	Reg 1-3 more prod. cost
PROFIT	$/head	(28.54)	(41.35)	(36.30)	(25.32)	(21.09)	(30.21)	17.11	BC less profitable
PROD. COST/CWT GAIN	$	5.91	5.64	2.43	(0.09)	(3.09)	(2.80)	(0.11)	Reg 1-3 higher cost/cwt
TOTAL COST/CWT GAIN	$	8.67	12.57	11.03	7.70	6.41	9.18	(5.20)	BC higher total cost/cwt

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

Table III-16A: British Columbia Beef Feedlot Finishing, Costs and Revenues First Difference From Alberta, $33/Ton Silage

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chlctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	- Notes -
FEED COST PER TON(NE):									
Barley	$/tonne	20.00	18.75	5.00	0.00	(14.00)	(12.00)	39.54	PNW most costly
Corn, Barley Sil.	$/ton	4.00	0.00	0.00	(11.00)	(11.00)	(18.00)	(10.00)	Fraser Valley most costly
Wheat Scrn, Potato Waste	$/tonne	86.00	0.00	0.00	0.00	0.00	0.00	10.34	FV, PNW only regions fed
POUNDS FED PER DAY:									
Barley	lbs/hd/day	(6.00)	(2.00)	(2.00)	(2.00)	(2.00)	0.00	(7.00)	( ) less lbs fed than Alberta
Corn, Barley Sil.	lbs/hd/day	0.40	4.00	4.00	4.00	4.00	0.00	(8.00)	Most lbs/head fed in BC
Wheat Scrn, Potato Waste	lbs/hd/day	5.60	0.00	0.00	0.00	0.00	0.00	15.00	FV, PNW only regions fed
DOLLAR DIFFERENCE:									
Marketing Shrink	$/head	0.00	12.96	12.96	12.96	12.96	12.96	(25.91)	Reg 2-6 far from kill plants
Trucking	$/head	(8.47)	11.29	11.29	14.11	19.76	12.42	(5.65)	Distance adds cost
GROSS INC. - MARKETING	$/head	5.92	(26.80)	(26.80)	(29.62)	(35.26)	(27.92)	31.76	Most gross inc. in PNW
COST OF FEEDER CALF									
Shrink in	$/head	7.00	0.00	3.50	0.00	0.00	3.50	7.00	Distance adds cost
Trucking to Feedlot	$/head	8.00	(4.00)	(2.00)	(4.00)	(4.00)	8.00	8.00	Distance adds cost
TOTAL FEEDER COST	$/head	15.00	(4.00)	1.50	(4.00)	(4.00)	11.50	15.00	Most cost in FV & PNW
MARKET MARGIN	$/head	(9.08)	(22.80)	(28.30)	(25.62)	(31.26)	(39.42)	16.76	BC has less margin than Alb
FEEDING COST									
Barley	$/head	(8.53)	7.57	(2.98)	(6.82)	(17.57)	(10.23)	4.82	Region 2 has more cost
Corn, Barley Sil.	$/head	2.20	6.20	6.20	0.00	0.00	(6.77)	(12.41)	PNW & Reg 6 has less cost
Wheat Scrn, Potato Waste	$/head	20.53	0.00	0.00	0.00	0.00	0.00	7.29	FV & PNW only feeders
TOTAL FEED COSTS	$/head	14.21	13.77	3.22	(6.82)	(17.57)	(17.00)	(0.30)	Reg 1-3 more costly
DIRECT COSTS	$/head	13.21	12.77	2.22	(5.82)	(15.57)	(15.00)	(1.42)	Reg 1-3 more costly
GROSS MARGIN	$/head	(22.29)	(35.57)	(30.51)	(19.80)	(15.70)	(24.42)	18.18	BC has less revenue
Interest	$/head	0.54	0.07	0.08	(0.18)	(0.31)	0.07	(4.64)	Reg 1-3,6 more int. exp.
TOTAL PRODUCTION COSTS	$/head	13.75	12.84	2.30	(6.00)	(15.88)	(14.93)	(6.07)	Reg 1-3 more prod. cost
PROFIT	$/head	(22.83)	(35.64)	(30.59)	(19.61)	(15.38)	(24.50)	22.82	BC less profitable
PROD. COST/CWT GAIN	$	4.18	3.90	0.70	(1.82)	(4.83)	(4.54)	(1.84)	Reg 1-3 higher cost/cwt
TOTAL COST/CWT GAIN	$	6.94	10.83	9.30	5.96	4.68	7.45	(6.94)	BC higher total cost/cwt

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

Table III-16B: British Columbia Beef Feedlot Finishing, Costs and Revenues First Difference From Alberta, $33/Ton Silage & ADG Change

Assumptions*	Units	Region 1 Fraser Valley	Region 2 Thmpsn-Okngn	Region 3 Kootenay	Region 4 Cariboo-Chilctin	Region 5 Bulkley-Nchko	Region 6 Peace	PNW (CAN$)	- Notes -
FEED COST PER TON(NE):									
Barley	$/tonne	20.00	18.75	5.00	0.00	(14.00)	(12.00)	39.54	PNW most costly
Corn, Barley Sil.	$/ton	4.00	0.00	0.00	(11.00)	(11.00)	(18.00)	(10.00)	Fraser Valley most costly
Wheat Scrn, Potato Waste	$/tonne	86.00	0.00	0.00	0.00	0.00	0.00	10.34	FV, PNW only regions fed
POUNDS FED PER DAY:									
Barley	lbs/hd/day	(6.00)	(2.00)	(2.00)	(2.00)	(2.00)	0.00	(7.00)	( ) less lbs fed than Alberta
Corn, Barley Sil.	lbs/hd/day	0.40	4.00	4.00	4.00	4.00	0.00	(8.00)	Most lbs/head fed in BC
Wheat Scrn, Potato Waste	lbs/hd/day	5.60	0.00	0.00	0.00	0.00	0.00	15.00	FV, PNW only regions fed
DOLLAR DIFFERENCE:									
Marketing Shrink	$/head	0.00	12.96	12.96	12.96	12.96	12.96	(25.91)	Reg 2-6 far from kill plants
Trucking	$/head	(8.47)	11.29	11.29	14.11	19.76	12.42	(5.65)	Distance adds cost
GROSS INC. - MARKETING	$/head	5.92	(26.80)	(26.80)	(29.62)	(35.26)	(27.92)	31.76	Most gross inc. in PNW
COST OF FEEDER CALF									
Shrink in	$/head	7.00	0.00	3.50	0.00	0.00	3.50	7.00	Distance adds cost
Trucking to Feedlot	$/head	8.00	(4.00)	(2.00)	(4.00)	(4.00)	8.00	8.00	Distance adds cost
TOTAL FEEDER COST	$/head	15.00	(4.00)	1.50	(4.00)	(4.00)	11.50	15.00	Most cost in FV & PNW
MARKET MARGIN	$/head	(9.08)	(22.80)	(28.30)	(25.62)	(31.26)	(39.42)	16.76	BC has less margin than Alb
FEEDING COST									
Barley	$/head	(12.34)	2.73	(7.15)	(6.82)	(17.57)	(10.23)	4.82	PNW has more cost
Corn, Barley Sil.	$/head	1.27	5.02	5.02	0.00	0.00	(6.77)	(12.41)	PNW & Reg 6 has less cost
Wheat Scrn, Potato Waste	$/head	19.22	0.00	0.00	0.00	0.00	0.00	7.29	FV & PNW only feeders
TOTAL FEED COSTS	$/head	8.15	7.75	(2.13)	(6.82)	(17.57)	(17.00)	(0.30)	Reg 1-2 more costly
DIRECT COSTS	$/head	7.15	6.75	(3.13)	(5.82)	(15.57)	(15.00)	(1.42)	Reg 1-2 more costly
GROSS MARGIN	$/head	(16.24)	(29.54)	(25.16)	(19.80)	(15.70)	(24.42)	18.18	BC has less revenue
Interest	$/head	(0.75)	(1.19)	(1.18)	(0.18)	(0.31)	0.07	(4.64)	Reg 6 more interest exp.
TOTAL PRODUCTION COSTS	$/head	5.38	4.53	(5.33)	(6.00)	(15.88)	(14.93)	(6.07)	Reg 1-2 more prod. cost
PROFIT	$/head	(14.46)	(27.33)	(22.96)	(19.61)	(15.38)	(24.50)	22.82	BC less profitable
PROD. COST/CWT GAIN	$	1.63	1.38	(1.62)	(1.82)	(4.83)	(4.54)	(1.84)	Reg 1-2 higher cost/cwt
TOTAL COST/CWT GAIN	$	4.40	8.31	6.98	5.96	4.68	7.45	(6.94)	BC higher total cost/cwt

* Alberta is base from which differences are calculated.

Source: SCI/KenAgra Estimates

The largest variable contributing to the cost difference in the Fraser Valley was the $19.86 per head higher cost of feed. The Southern Interior experienced nearly the same differential in feed costs ($19.41). The Kootenay finisher had higher feed costs than Alberta by $8.86 per head. Also adding to the cost of Fraser Valley finishing cattle was higher transportation costs and shrink-in to the feedlot. To the Fraser Valley's advantage was the lesser costs incurred during transportation to the slaughter plants. However, this lesser cost of $8.47 per head did not offset the additional cost of feed.

The Cariboo, Bulkley-Nechako, and Peace regions had costs of gain equal to or less than the cost of gains of Alberta. This resulted from feed costs that were similar to or less than those of Alberta. These regions still had profits $21 to $30 less than Alberta. Accounting for the lower profit was a higher cost from shrink during transportation to the slaughter facility and higher transportation cost associated with marketing. This would be expected since the Alberta finisher has slaughter plants close to the feedlots.

The PNW experienced higher profits in the aggregated cost model than did either province. These profits resulted from less shrink and interest costs. (The largest Washington feedlot lies across the road from the Pasco slaughter plant.) The potato waste fed at these feedlots significantly reduces feed cost, however the largest reduction in costs come from lower transportation costs (less distance and lower fuel cost) and shrink.

Consideration for higher costs of barley silage in Southern Alberta was examined in Tables III-16A and III-16B. In this exercise, the cost of (Southern) Alberta barley silage was increased from $18/ton ($19.84/tonne) to $33/ton ($36.38/tonne). The result of the higher cost was a reduction of Alberta revenues (or a gain by the B.C. regions and PNW) by $5.71/head (Table III-16A).

Another analysis (table III-16B) increased the average daily gain in Regions 1, 2, and 3 to 3.74 lbs./day by reducing the feeding period from 94 days to 88 days (while keeping the Alberta barley silage cost at $33/ton). This analysis increased per head revenues in Regions 1, 2, and 3 by $8.37, $8.31, and $7.63 respectively. This assumes that the rate of gain in Southern Alberta and PNW would not be the same as in Regions 1, 2, and 3. It is likely that rates of gain would be similar to regions 1, 2, and 3 and if so, differences between regions would not change. However, neither of these analyses changed the overall results or conclusions (see 3. Conclusions below) drawn from Table III-16. The nominal values to generate the first difference tables are located in Appendices B5, B5-A, and B5-B.

3. Conclusions

The cost analysis indicated that Alberta and the PNW were the least costly and most profitable regions in which to finish cattle. In British Columbia; Cariboo, Bulkley-Nechako, and Peace River areas were the least costly (per cwt. of gain).

The Fraser Valley was the most costly production region, but when including handling to the slaughter facility, Fraser Valley costs were average among those of B.C. Profitability in B.C. remained at a disadvantage to Alberta and PNW. Also, the Fraser Valley finisher is captive to one primary slaughter facility and if these finishers were required to ship to Alberta, PNW or even closer regions in eastern Washington profitability would decrease substantially.

d) *Slaughter/Processing*

i) *Introduction*

The slaughter/processing segment is particularly important to examine in context of the entire Northwest--B.C., Alberta, and Washington-Idaho--if not North America in total. This derives from the fact that the industry in the past ten years has become extremely consolidated in the hands of a few key firms.

The U.S. industry is dominated by 4 major players that control 70% of the slaughter/processing. Canada has become dominated by 4 firms that account for 59% of all slaughter/processing and a couple of these are on shaky ground. In fact, B.C. slaughter is now largely in the hands of one firm.

Therefore, to be competitive in the business it is necessary to understand that the market being competed for is a global North American market and that local markets are fair game for any one of the major industry players.

The examination in this section of the report provides: a brief historical perspective of the slaughter/processing segment; a review of the industry players and their consolidation; comments on technological comparisons; and, a discussion of cost issues within the segment.

ii) *Historical Perspective*

The meat processing sector is important to the North American economy, contributing about one hundred billion U.S. dollars ($US100,000,000,000) in sales and employing about three hundred thousand (300,000) people.

Historically, beef packers were mainly located in or near large population centers. In the early years up to World War II, cattle produced for table beef were traditionally railed into terminal auction markets in large cities (e.g., Chicago, Toronto) for sale to packers located nearby. After slaughter, fresh meat could readily be marketed to city consumers or railed to other cities and towns.

Since World War II, packing plants gradually moved toward the area where animals were sourced, for economic and environmental reasons. As commercial finishing feedlots grew in size, usually in dry climate areas, close to supplies of both feed grain and feeder cattle, with adequate water supply, beef packing plants shifted to locations with close proximity to these feedlots. Such packing plants tended to specialize in slaughter of grain-fed steers and heifers.

Other slaughter plants which handled cows and bulls (sourced from beef and dairy herds, in the culling process) had less incentive to move. They mostly remained near traditional areas where dairy farms are concentrated, which is often near large cities for practicality of fresh milk deliveries.

Today, the major packing plants killing grain-fed cattle in North America are located mostly on the Great Plains and Canadian prairies, east of the Rocky Mountains. More detail was presented earlier in Figure III-2.

Beef packing companies in both the U.S. and Canada traditionally were operated by entrepreneurs with a combination of butchering and business skills, who bought live animals and sold meat and by-products as commodities. The essence (and philosophy) of the business was to maximize volume movement through a plant, which was aimed at minimizing average fixed costs per pound of total carcass weight processed.

Gross profit margins were usually razor thin due to intense daily market competition in procuring animals and equally intense pressure to re-sell the perishable meat and by-products almost immediately in fresh form. Cost cutting and price cutting were often parallel tactics for keeping business momentum, while relentlessly pushing maximum product through the pipeline in volatile market conditions.

In the past, most beef packers (in both U.S. and Canada) rarely earned annual net operating profits exceeding 1 percent of total sales. Often red ink was guaranteed instead, by fast turnover with fluctuating margins and negative cash flow, creating temptation to cut corners. Since it was rarely possible to sell meat above the going market price, survival sometimes depended on finding ways to buy below market price or to increase meat yields during processing.

Over the years, many meat packers learned to diversify their business for better stability and more balanced trading risks. Some firms (e.g., Hormel, Oscar Mayer) improved profitability by exiting slaughter to focus on value added processing. However, many firms solely in slaughter have found slaughter profits elusive.

iii) *Industry Participants and Consolidation*

With costs maintaining a squeeze on the North American, particularly the U.S. beef industry, margins in the first half of the 1980's, there were defensive actions taken by U.S. slaughter/processors from 1985 onwards. At the time U.S. consumer demand was also lackluster and there was excess plant capacity throughout the U.S. and Canada. The U.S. packers sought economics of scale and survived through acquisition and merger consolidation.

This rapid trend toward industry concentration (spurred also by signals of deregulation and diminished government anti-trust regulation emanating from the Excel-Spencer Beef-Monfort court case stretching from January, 1984 to the final Supreme Court decision in December, 1986), saw emergence of a core of three (IBP, ConAgra, Excel-Cargill) big packers controlling almost 60% of total steer/heifer slaughter and 70% of total boxed beef trade, each with nationwide market distribution.

This trend to concentration of meat packing and condoning of same by cattle producers, has occurred in numerous other countries, e.g., Australia (where the three biggest beef packing operations are now foreign owned by default of local packers who lacked the funding to maintain dominant ownership), New Zealand, Denmark and Ireland. In all instances, the "rationale" for concentration has included containment of rising costs and a need for greater marketing strength, but these arguments are open to some doubt.

This worldwide trend to meat packing concentration hit Canada belatedly in the late 1980's. This occurred after the entry of Cargill with a large new plant in Alberta in 1989. Since that time many closures of existing plants, and take-overs of other plants has resulted

By attrition - including closure of all former CP beef plants except Moose Jaw plus all plants of former number 2 packer Swift Canadian (except Edmonton) plus 2 Burns plants (Manitoba, Ontario) and one Intercontinental beef slaughter operation (B.C.) - Canada's four largest cattle slaughterers in November 1991 are estimated to be capable of handling over 50% of Canada's total annual cattle slaughter.

In addition to closures of CP and Swift beef plants in eastern Canada during the past decade, some other smaller beef plants closed in Ontario, coinciding with the decline of cattle feeding operations in that province. The substantial beef slaughter plants left in Ontario are:

- Better Beef Ltd., Guelph:

  Slaughtering approximately 4,000 steers and heifers weekly.

- Mullers Meats Ltd., Kitchner:

  Slaughtering approximately 3,000-3,500 cows weekly, (for boning at Niagara Falls) including dairy cows from Quebec.

There are no other significant beef slaughter facilities in Quebec or the Maritime Provinces.

In western Canada, the 3 former significant beef plants in Manitoba are closed (Burns, Swift, CP); two remain in Saskatchewan (CP Moose Jaw, which is rumored to close soon, and a small killing operation at Intercontinental Saskatoon); British Columbia has one medium-size packer left (J & L Beef, Cloverdale, B.C.) plus three small plants nearby in lower Fraser Valley; the Intercontinental beef kill in Vancouver ceased in September 1990 and is unlikely to re-open.

By attrition, Alberta remains the only province with substantial cattle slaughter facilities, comprising (see Figure III-8):

- Cargill, High River, Alberta:

  Killing 1,300 fed cattle daily (in a new plant constructed in 1988) and is expected to increase to 1,900 by the end of 1991 with a double shift.

- Lakeside, at Brooks, Alberta:

  Killing Capacity 1,800 daily in a newly expanded plant which lacks boxing facilities.

- XL Beef, Calgary, Alberta:

  Number 3 player struggling to reorganize with loans from Alberta Government; has 3 plants, 1 slaughter, 1 fabricating, 1 distribution with some costly movement of product between the 3.

- Burns Foods, Lethbridge, Alberta:

  Old plant killing just over 400 cattle daily, but without any government loans or subsidy may survive.

- Gainers, Edmonton, Alberta:

  Very old plant (aging former Swift plant) killing approximately 700 steers and cows daily. Owned by Alberta government after foreclosing former owner for debt default; staying open under some duress until there is political decision whether to:

  - Merge hog kill with Fletchers at Red Deer; or,

  - Remain open as the only plant north of Calgary to kill cows from northern Alberta and B.C.

In addition Lucerne Foods (Safeway Subsidiary) is a key, if not always highly visible, player in the beef industry in western Canada as they provide a place for some western processors to box beef; i.e., Lakeside.

Its original function was to fabricate most of the beef (including ground beef) destined for delivery to Safeway retail stores in western Canada (Thunder Bay to Vancouver Island).

While Safeway's share of the retail food market in western Canada is under competitive pressure from newcomers such as Save On Foods/Overwaitea (Pattison) and Super Store (Loblaw), it is still a major force. It continues to open new stores (while closing some others), but more importantly it has embarked on other expansive projects: which could lead to extensive product innovation and an expanded future in the distributive beef trade.

In B.C. the five remaining beef slaughter plants - J & L Beef at Cloverdale, plus 4 smaller ones - are un-subsidized and capable of survival in niche roles because they are flexible and competitive with low investment levels (probably fully amortised). The five firms are:

- J & L Beef, Cloverdale, B.C.

  With its own nearby feedlot can kill up to 160-180 head per day (mainly fed steers - some cows) and has satisfactory local sales outlets. Its manager is highly regarded in the industry for his integrity, knowledge, and business ability. His main concern has been procurement of adequate supplies of fed (graded) cattle, but this situation has improved recently with availability of competitive cattle from Alberta. He has options to expand grinding beef, with additional cow kills.

- Coaspac, Abbotsford, B.C.

  This plant can maintain mixed kills of steers, cows and bull, up to 60 per day. The owner does his own astute buying.

- Kohler's Meats, Aldergrove, B.C.

  This small packer/processor is a specialized sausage maker who uses fresh cow beef as an ingredient. They kill about 75 head weekly (plus hogs). Seventy five percent are usually fed steers to supplement the small cow kill

- Pitt Meadows Meats, Pitt Meadows, B.C., (east of Burnaby)

  The owner feeds and kills his own cattle and lambs as well as a few hogs and dairy cows that come to his attention. This group sells much of its product through a roadside retail meat shop on the farm property where the owner lives and has their Federally Inspected slaughter plant.

- Island Meat Packers, Victoria, B.C.

  This small out-of-town slaughter plant handles a mixture of lambs, cattle and veal. It services local trade, and is certified by the provincial inspector for selling and shipping products to the mainland (only certified plant on the island).

All of these operators appear to be enterprising survivors who do not need any subsidized help.

The profit motive that drove the newly-emerging giant meat packers mentioned above toward concentration has not been fulfilled to any great extent in any of the aforementioned countries. If it were, producers would not be applauding.

What has happened instead, in most countries, is that the aspirations of cost-saving from ever-increasing economics of scale have been dwarfed by the dis-economies of maintaining sufficient slaughter throughput to justify large scale plants. Excess capacity has, in most instances, forced packers into intense buying competitiveness to obtain adequate supplies of finished livestock. Such price competition made cattle producers the principal beneficiaries, regardless of stagnant or declining consumer demand for red meats.

All of these developments, which included heavy investments in new equipment and facilities in meat packing plants, did not stir any parallel actions in the Canadian industry, which remained somewhat insular until Excel (in the name of Cargill) entered Canada in 1988 to build a new, "state of the art" plant with financial inducement from the government of Alberta, which saw in Cargill the advent of plant modernization to match U.S. developments, but the true cost proved endless, and very destructive for Cargill's Canadian competitors, and is still going on.

This sudden encroachment into Canada- the first ever by a major U.S. meat packer - added substantially to existing excess capacity in the Canadian industry; it immediately caused major disruptions and subsequent closures of other, older plants throughout Canada. It also coincided with an increasing drain of live cattle from Western Canada into the U.S. due to excess capacity in U.S. packing plants.

At the time these adjustments were going on Mr. Kevin Grier of the Ontario Ministry of Agriculture, correctly predicted that higher plant operating costs in that province, combined with increased competitiveness of packers in Alberta (newly assisted by provincial government subsidies), and the U.S. would cause a rapid future decline in Eastern Canada of finishing and packing plant operations. He was right.

Mr. Grier also predicted correctly that boxed beef economics being acclaimed by the U.S. packers and some Alberta packers, as a technological break through, would penetrate the local carcass beef business which was formerly the niche of some 19 Ontario beef packers, many of whom have since closed their doors as local supplies of finished cattle declined.

Finally, Mr. Grier correctly predicted that some smaller local beef packers would survive in Ontario to service more special niche markets.

British Columbia has experienced a similar contraction of local beef packing operations. Like Ontario, the absence of an economic base for feeding/finishing adequate cattle numbers has made operations unprofitable for most traditional beef packers. J&L Beef has survived successfully, together with some smaller local players, because it had access to enough finished cattle to support lower-scale efficient operations with niche market outlets.

vi) *Technological Situation*

Technologically the meat packing process has improved significantly through refinements that have reduced labour requirements on the process line and through methods to handle cattle and distribute meat. Having said this it can also be said that the process is still basically the same, an animal arrives at the packing plant, is slaughtered, cut-up, packaged, and shipped to market.

Technological advancement and competitiveness in the industry can be summed up by one industry observers statement; "competitiveness appears more consistently to be linked to the ability of particular firms within the industry to innovate and up-grade". This is basically what has happened, technological innovation has been a creeping innovation and the key features have been:

- Larger plants that offer a more efficient operating scale and lower costs if operated at full rated capacities;
- Changing methods for managing risk when buying cattle for slaughter;
- Machinery innovations that have permitted the packer to do particular tasks much more efficiently;
- Breaking the carcass down in the processing plant, rather than at the supermarket, and shipping the product as "boxed beef".

Several illustrative commentaries obtained during interviews and accumulated over time as work has been done with the industry help to provide a picture of technological competitiveness of different firms or groups of firms within the industry.

- Plant Size and Scale

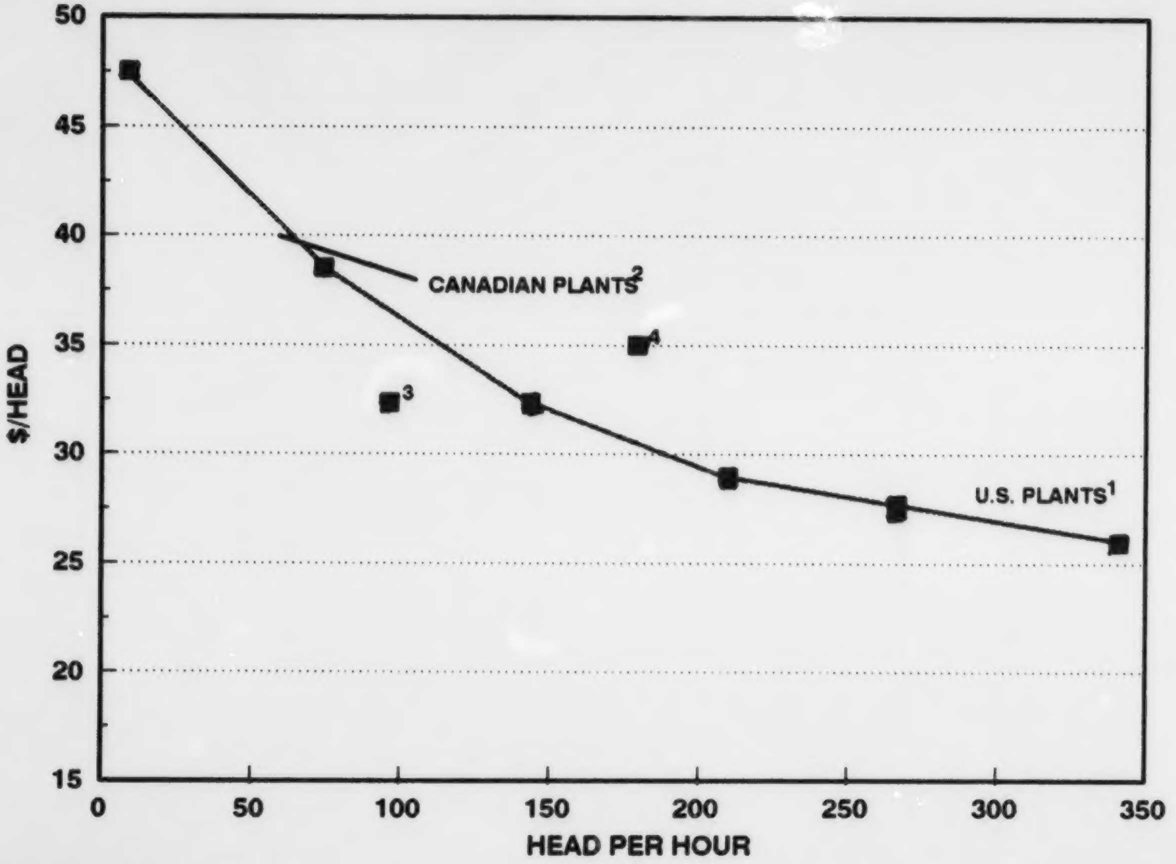
The trend to larger plants is driven by the philosophy that bigger plants gain economies of scale that permit lower costs of production. Yes, there can be advantages derived from economies of scale. Some researchers have cited advantages for large packing plants, in fact many think that the standard kill should be up to 20,000 cattle weekly to be world competitive in the industry. These larger plants can spread fixed costs over a much larger volume.

This opinion echoes traditional industry philosophy that maximizing volume is the best way to maintain profit margins - it assumes that all competitors have to sell beef near the same prices (with nobody securing premiums as long as beef remains subject to commodity trading) and those who can reduce operating costs or buy cattle cheaper will have more secure profit margins.

This scale economy philosophy depends on the axioms that maximizing volume means fully utilizing plant capacity (usually this has applied to single-shift workdays per week with some supplementary Saturday kills). However, the fallacy of this philosophy is that, under conditions of excess plant capacity in an industry, which has been chronically evident in the meat industry in both Canada and the U.S. during the past decade, the penalty of relentlessly buying cattle to maximize plant throughput has been excessive procurement cost, and resulting financial losses. It has been shown that once a plant produces over 250 to 300 head per hour the operating cost savings is relatively minimal (see Figure III-16) and can easily be offset by poor cattle procurement practices.

Figure III-16

Estimated Cost of Cattle Slaughter
By Size of Operation



Sources:

1. Purcell (1990). Figure 5, p. 14.
2. & 3. Agriculture Canada, Alberta Branch (1987). Capacity and Competitiveness of the Western Canadian Red Meat Slaughtering Industry. Figure 16, p. 45
4. Canadian Meat Council.

The real beneficiaries, of scale economies, under these circumstances are the vendors of cattle, who rarely appreciate their good fortune in selling to customers who are forced to operate in normal times on the thinnest profit margins that exist in the business world. When governments (such as in Alberta in recent years) turn to subsidizing losses of meat packers for survival, they are in fact injecting that subsidy into past excessive prices paid for cattle.

The Chairman of Burns Foods Ltd. in Calgary (which has been forced to close two former beef plants in Manitoba and Ontario because of claimed predatory competitor pricing policies, and retains a third beef packing plant in Alberta without government financial support) has publicly condemned all forms of government subsidy for meat packing plants as illogical.

Mr. Child has publicly cited evidence that most Canadian beef packing plants have (regardless of the physical structure being old or new) maintained adequately up-to-date internal equipment to maintain competitive speeds of production chains while satisfying the constraining regulatory hygiene and inspection requirements of government inspectors present on the line. He has stated that operating costs do not vary as greatly as claimed between large modern plants and smaller, older ones - given the amount of labour needed to keep any chain moving from a live animal to a dressed one ("dressed" - a contradictory term for a carcass stripped of hides, organs and entrails).

He further claims that a smaller plant can be equally competitive with a large one if it can dispose of by-products like hides and offal more efficiently, for better price returns. He has quoted comparative operating costs of 3.0 to 3.5 cents/lb. (6.6 to 7.7 cents/kg) as a basic range in which both his smaller plant and the larger new plants have to cost slaughter operations for the average animal. (His figures apparently apply to live weight; on a carcass weight basis, other industry sources cite slaughter floor costs near 5 cents/lb. (11 cents/kg); yields for steers and heifers from live to carcass weight are near 60 percent).

He infers that most packers incur similar basic plant operating costs (excluding higher amortisation cost for new plants), but that profits or losses are largely determined by predatory practices in paying too much to acquire cattle or unduly discounting the selling prices of beef. He claims smaller packers can survive by being more flexible and avoiding large-scale logistical shortcomings of excess capacity and by developing good cattle supply arrangements and loyal customers.

- Trading Skills

A soft technology was introduced by two of the "Big 3" beef packers (Excel-Cargill and ConAgra). The original core businesses of these groups was grain-related and they had links to substantial cattle feeding operations. These grain-oriented companies, skilled in use of futures and options to cross-hedge market positions and reduce trading risks, introduced increasing forward contract arrangements for purchasing cattle, as well as some cattle feeding on their own account. This helped provide a base supply for maintaining large daily kills. Also, they heeded the logic of locating packing plants as close as possible to cattle finishing so their buyers could more easily inspect cattle before procurement and movement to the packing plant.

These two factors--trading skills and location--very likely mean more to the profits of these firms than the economies of scale they have in their plants. Yes, it is important that they have efficient low cost facilities, because when combined with skills in using the futures markets to lay off risk it makes for an extremely competitive group. Witness the Cargill operations in Alberta where they have been accused of driving others out of business.

- Mechanical and Organizational Innovation

Another example of technological innovation came with the story of IBP's phenomenal success in out-performing all competitors in the U.S. beef industry in the 1960's and 1970's with a revolutionary, lower-cost (initially non-unionized) mechanical and worker organized production system for beef slaughter and fabrication and boxing, which ultimately forced dramatic industry reconstruction by U.S. competitors to re-align their positions at lower levels of labour costs.

Along with this development was the streamlining and balancing of operations so as to keep a plant running without switching from steers and heifers to bulls and cows. The Canadian beef packing industry players were slow to adopt this practice and had less success (than U.S. counterparts) as specialists in smoothing slaughter/fabricating production lines to an optimum.

- Marketing Services - "Boxed Beef"

Finally, a fourth key technological innovation has been the transfer of breaking the carcass from the supermarket to the packing plant. This came about for efficiency, but most importantly cost reasons. The meat department of the local supermarket pays a much higher wage for the meat cutter than the packing plant pays for the line worker. Therefore, the more breaking that can be done at the plant saves the supermarket substantially. IBP introduced the practice of so called "boxed beef" when it revolutionized, on entry, several aspects of the business.

Canada processors were slow to follow suit on this front as the industry remained somewhat insulated from direct U.S. influences until the late 1980's. Until recent years, the Canadian industry quartered its beef carcasses between the 10th and 11th ribs, while the U.S. quartered between the 12th and 13th ribs. This small difference nullified cross-border trade until Canada switched to between the 12th and 13th ribs.

A further key difference, of Canadian packers was the practice of catering to different needs of a limited number of large supermarket chains, thereby cutting beef differently for individual orders from each. Production delays within Canadian plants - in switching from one cutting method to another to suit customer orders - caused time losses, that some industry watchers claim have been up to an hour in an individual shift. U.S. packers, on the other hand, appeared to have succeeded with initiatives to force all customers to take beef in a form derived from standard fabricating methods "boxed beef", thus keeping

U.S. production lines less interrupted for changes in cutting methods. These kind of practices can pose major competitive problems for Canadian packing plants versus U.S. competition unless adjusted for.

vi) *Costs and Competitiveness*

When examining the cost competitiveness of firms in an industry it is essential to understand the critical elements that make up the costs. In the beef processing industry the key costs are the price paid for cattle (70 to 80 percent of the cost), marketing and distribution costs, and operational costs.

The major cost area of cattle procurement is subject to the vagaries of the market, which are difficult to control other than through good buying and trading skills. Some plants may have price advantage due to location with respect to supply, but in the intense bidding game for cattle in recent times these advantages can be temporary.

It is evident, from various industry interviews and earlier industry research data, that there are three key cost areas which warrant discussion as they do impact significantly on competitiveness. These include:

- Labour Costs
- Financing Costs
- Distribution Costs.

Direct labour costs are about the only meaningful comparable costs for companies operating within the industries of Canada and the U.S.

A divergence of labour costs between the industries in the U.S. and Canada does exist. Industry restructuring in the U.S. during the 1980's saw average meat packing wage rates decline 10-20% (from over $US9 to $US7-8/hour) between 1983 and 1987, while the rest of U.S. manufacturing saw 10% increases. Union negotiations also shaped continuing wage rate increases in the Canadian meat packing industry during this time, without any similar restructuring. Hourly wage rates in some Canadian packing plants in 1988 were measured at $15.30 (wages plus benefits) and continued to increase.

In 1991 this wage rate gap continued to persist, and suffered a disadvantage of approximately 20 percent (some researchers have said up to 30 percent including employee benefits). This is a significant difference in an industry which is highly labour-intensive, and where labour cost usually comprises over 50 percent of total operating costs (excluding cost of raw materials). During 1991 the difference was exaggerated by the fact that the Canadian dollar gained strength in relation to the U.S. dollar.

- Financing costs

Higher interest (1 to 2% higher) now, in 1989 was as much as 4 % higher and financing costs in Canada over the U.S. are a key competitive element in the overall cost of working capital, and servicing debt incurred for plant and equipment. Companies whose plants are paid off have some advantage over those who invest large sums in new plants. Also, companies (e.g., Cargill) with access to lower-interest loans from U.S. sources have some advantages.

Discussions with Alberta provincial government officials suggest that this factor has been taken into account in making loans and grants on favourable terms to locally-owned companies like Lakeside, XL and Gainers since the advent of U.S. owned Cargill's operations in 1989.

The terms and conditions of these loans and grants have been kept somewhat obscure from public visibility for apparent political reasons; this kind of government support has been rationalized by some as a political and economic necessity to keep Alberta owned meat packers solvent against the pressures of U.S. competition (and to induce much-needed new investment in an otherwise decaying beef packing industry) but has been strongly criticized by others because:

- It unfairly handicaps those who were not recipients of such favourable grants and loans.

- It has contributed directly to forcing these non-recipients to close old beef packing plants in both Alberta and other provinces across Canada, who could no longer compete. (This latter factor has been cited also as a necessary pain to force modernization of Canadian industry).

- Distribution Costs

Higher distribution costs within Canada have become a competitive disadvantage to some Canadian packers and processors. This results from a combination of factors involving geographic and logistical disadvantage, as well as higher labour and fuel costs. Canadian processing companies that traditionally have distributed and advertised branded products nationally with relative immunity from U.S. competition are now under growing cost pressure because:

- Some of these companies used to make up full truckloads by including fresh beef with processed products, but no longer are handling beef due to plant closures. This reduced economy of scale for transport has forced two major long-time competitors (Schneider and Canada Packers-Maple Leaf Foods - both now forced out of beef packing) into an unprecedented joint venture for distribution of pork and processed meat products through a third jointly-owned company - simply as a tactic to reduce costs. The durability of such arrangements between direct competitors seems questionable, given the protective need of each party to maintain sales confidentiality and customer service priorities, and related customer loyalties.

- The long west-east coast haul for beef surpluses traditionally traded from Alberta to Quebec and eastern Canada markets will come under increasing cost pressure from U.S. packers who can ship boxed beef into eastern Canada with more flexibility, lower U.S. fuel costs and less distance (from the U.S. mid-west).

Not withstanding this, trucking rates from Alberta to eastern Canada have been reduced to a modest degree in the past year to meet this competitive pressure.

- A combination of distribution efficiency, lower labour costs and quality-control guarantee has enabled some specialized U.S. beef processors to compete effectively in the Canadian market place.

For example, one large U.S. manufacturer producing frozen beef patties in Pennsylvania - for fast-food hamburger restaurant chains within meticulous quality control standards- stated publicly in October 1991, that he is shipping 7 to 7.5 million lbs. (3.2 to 3.4 million kg) of frozen beef patties annually into eastern Canada for restaurant chains there on a satisfactory regular basis. The ingredients of these beef patties, manufactured in the U.S., include some lean boneless cow beef imported from Canada.

This example indicates competitive cost disadvantages of Canadian patty-makers given the existence of a 1.3 cents/lb. (2.87 cents/kg) customs duty (each way) on frozen beef crossing the border. Note: Reciprocal duties on fresh beef were unexpectedly eliminated on August 1, 1991, for reasons that appear connected to the pork counter-vail dispute between the U.S. and Canada.

- Distribution and selling competitiveness for Canadian processed meat products has also been impacted negatively by a trend in the past year for more Canadian consumers to cross the nearby U.S. borders to do shopping at cheaper prices, including

> food shopping. Canadian processed meat products are rarely on sale in U.S. supermarkets due to high costs of promoting a visible presence, and the barrier of a higher cross-border import duty than applies to fresh meat.

In addition to the specific cost differentials discussed above the teams review of information and interviews has resulted in several valid observations as regards costs and their comparisons. Some of these observations are summarized here.

A first point is that it has been difficult to develop a good understanding of cost competitiveness, as the meat industry has defied clear analysis over the years. As an industry with rapid cash flow and fast daily product turnover (latter usually on 7-day payment terms for fresh meat - up to 30 days and longer for processed meats), it has attracted periodic investment interest from companies outside the industry.

For example, several conglomerates in the U.S. acquired all of the "Big 4 " U.S. meat packers during decade of the 1960's when beef demand and production were both expanding rapidly. However, all of these conglomerates, virtually within a decade, because of unpredictable razor-thin profits and unsatisfactory returns on investment from slaughter\fabricating operations exited the business. Occidental Petroleum had the same experience after acquiring IBP, the U.S. meat giant in 1981 - it finally jettisoned its investment at a heavy price discount.

To many in the financial (investment) world it has become an axiom in the financial context that beef slaughter\fabricating operations (disassembly of cattle - as opposed to value added processing) is a precarious day-to-day business that can not be controlled profitably by "normal business systems". Day-to-day dexterity by direct hands-on management has been the only hallmark of acceptable management, and that becomes plagued by uncertainty when cattle throughput falls below plant capacity and the cost of buying cattle is pushed too high by unpredictable competition.

Also, inconsistency of the live animals is a further major variable problem. Beef packers don't always know what they have bought (in terms of animal quality) until the carcass is on the hook. Even at peak plant efficiency, net profitability (of beef packing/ fabricating companies that publish results) has rarely exceeded one percent of sales.

A second point regarding costs is that the speed of a chain moving beef animals "along the rail" through a packing plant - and the amount of labour needed to perform all related tasks along the way from knocking box" to "chiller room" - determines the basic labour needs and related operating costs of a slaughter plant.

The step-by-step system includes the same basic procedures for each plant - from stunning to bleeding to legging to de-heading, eviscerating, hide-removing, splitting into sides and chilling. Related government inspection requirements inhibit excessive chain speeds which do not maintain high standards of cleanliness at all stages.

Therefore, the main difference between a plant like J&L Beef in British Columbia (killing 20 to 25 cattle per hour) and a larger modern plant like Cargill in Alberta (aiming to kill up to 170 cattle per hour, with extended shifts) is the number of work stations along the line. J&L needs more multi-skilled personnel to perform various tasks on a slower moving production line within a fairly confined plant space; Cargill by necessity uses more employees performing single quick tasks on a fast-moving production line spread over a very large plant space, with presumably large overhead and maintenance costs.

Cargill has declined to reveal its slaughter floor operating costs per pound, but they are estimated not to vary much from broad assessments made by other industry researchers:

Estimated Average Cost	Canada ($ CN)		U.S. ($ US)	
	Per Head	Carcass Per lb. *	Per Head	Carcass Per lb. *
Killing Costs	$35-40	5.4-6.2 cents	$25-35	3.8-5.4 cents
Beef Boxing Costs (Fabricating)	$55-60	8.5-9.2 cents	$40-50	6.2-7.7 cents

** Assuming average carcass weight near 650 lbs.*

While cost figures for each individual packing plant are notoriously difficult to obtain for proprietary reasons -and because confidentiality applies to those figures that are disclosed - it is believed, as a general statement, that J&L Beef in British Columbia operates well within the above parameters of plant operating costs, and is thus a competitive player in a context of plant operating costs with reasonably good utilization of plant capacity.

Whether J&L survives profitably becomes a question of how much it pays to buy cattle, compared with how effectively it can market all the component parts of a beef animal, including offals (variety meats) and by-products. In the latter regard, J&L has proved (like Burns) resourceful and successful over the years, without help of government subsidy. Whether it can continue to survive depends to a large extent on:

- Continuity of a base supply of finished fed cattle from traditional nearby feedlots in the lower Fraser Valley;

- Availability of fill-in supplies of fed steers and heifers from other parts of British Columbia or Alberta (latter source has become better recently) at "reasonable prices";

- More slaughter of cows and bulls which are readily available in British Columbia but are competitively sought by the U.S. cow slaughters just across the border; and,

- More value-added processing of beef for niche markets.

A third point uncovered is that there are marketing problems in Canada which may inhibit the ability of beef packers to minimize costs. Traditionally (up until 1986-87, when there was little cross border trade in high quality table beef, due to different Canadian carcass quartering, and different grading), all of the surplus fed beef production in Alberta went east to Quebec and Canadian Maritime provinces with a small proportion going to beef-deficient British Columbia.

This surplus - over 50 percent of production - originally went by rail in carcass form. In the mid to late 1980's, some (but not all) was boxed, and began to move east by truck. Today, most goes by truck, but only a proportion is boxed. A lot still goes in carcass form, which results in very expensive transportation costs due to the vacant air space.

The reasons given for continuance of carcass shipments to eastern Canada include preferences of "die-hard" Montreal traders (who want to do the breaking themselves, to specialized customer needs aimed at meeting the competition of U.S. table beef imports; but, a more telling reason has been the inability of Alberta packers to box all the surplus beef produced. Until Cargill built a new modern plant in 1989 with both fabricating and boxing under one roof, no other plant in Canada combined these two functions.

Canada Packers used to incur transport costs of moving carcasses over 100 miles (161 km) north from Lethbridge to its boxing plant (a converted slaughter plant which stopped killing) in Calgary. Lakeside still does exactly the same - moving its carcasses to Calgary for Lucerne to box. XL moves carcasses a shorter distance from one plant to another within Calgary. Burns in Lethbridge now has limited boxing under one roof.

Added to these marketing problems, beef packers in western Canada face other marketing problems which could erode profit margins if they are forced (by U.S. beef selling competition in eastern Canada) to ship south more surplus table beef for sale in the U.S. Canadian grading of beef is not yet well known in the U.S. - the top A-1, A-2 grade of Canadian fed beef corresponds closely with "select" grade beef in the U.S., which is discounted in price below U.S. "choice" grade beef.

Furthermore, carcass beef as such is not readily salable in the U.S. market, which is almost totally geared now to "boxed beef". By contrast, U.S. table beef is becoming increasingly known and accepted in Canada, especially in the east. The Canadian Meat Council is advocating regulations to require "no roll" U.S. beef to be labeled "ungraded" but this is not expected to deter its increased market share in eastern Canada, at competitive prices. A number of supermarkets there are ceasing to display Canada A-1, A-2 grades in its beef cases to accommodate all kinds of beef, including U.S. The abolition of 1.3 cents/lb. (2.87 cents/kg) import duty on fresh U.S. beef on 8/1/91 will further this momentum.

Finally, in the situation in which Canada was placed in the late 1980's, with excess plant capacity and with U.S. packers in the same predicament but with significantly lower plant labour costs than existed in Canada, the diseconomies of insufficient plant throughput became the most telling cost factor. By just staying in the business, albeit with the Alberta government contributing subsidies to certain packers for survival, Canadian packers helped to create an exaggerated price bonanza for producers. The natural reaction of producers was to produce more cattle and to look for more feeding/finishing opportunities while grain continued to be cheap. Hence, the dilemmas of the B.C. Beef Industry at present.

The optimum cost situation for packers, under conditions of optimum/maximum throughput, is normally a "buyers market" with plentiful cattle supplies. This is not necessarily an optimum situation for cattle producers.

The future optimum situation for all segments of the North American beef industry will come when packer labour costs are closer in line everywhere and when both Canadian and U.S. table beef are equally salable on both sides of the border to a consumer market displaying strong demand and purchasing power. In such a situation, industry profitability will be more equitably attainable, without the distortions of producing over-sized, over-finished cattle that do not meet customer demand, but simply suit the economics of cheap grain and weight gains at the expense of consistent quality.

Until this time comes, the principal needs of the Canadian beef industry do not include additions of more packing plant capacity in B.C. or elsewhere, but rather focus on:

- Going all out to achieve grading compatibility (or standardization) with U.S. beef, so that Canadian beef has full access to the U.S. market (instead of just vice versa)
- Combining with the U.S. to pursue a relentless objective of producing consistent beef that will appeal more to ultimate consumers and thus stimulate demand. This is the major challenge facing the industries of both countries, and merits a joint effort to maximize effective use of all cheque-off dollars collected for promotion purposes.

5. *Grading/Inspection between U.S. and Canada*

a) *Overview*

Until the early 1980's, cross-border trade in either direction for high quality table beef was discouraged by official regulations requiring Canadian beef sides to be quartered between the 10th and 11th ribs, while U.S. beef sides were quartered between the 12th and 13th ribs - thus, inhibiting any commercial standardization within the respective wholesale trades. Further inhibition was caused by kidney, kidney fat and internal channel fat being removed in one country, but left intact in the other country. However, cross border trade in live cattle and ungraded processing (bull and cow) beef did occur. While these anomalies are now being overcome, the difference in grading systems remains a problem that inhibits sales of Canadian table beef into the U.S.

wholesale trade, but not vice versa. Canadian wholesale trade, especially HRI users, have adapted quite rapidly to using U.S. table beef cuts.

In the 1950's and 1960's some U.S. buyers (e.g., New York wholesale traders) visited beef packing plants in eastern Canada and personally tagged (selected) their purchase of individual high quality carcasses. This practice was costly and faded away.

Without personal beef selection, U.S. buying of Canadian table beef on a grade basis became impractical because the two grading systems were not compatible. Importing of ungraded Canadian beef sides for re-inspection and grading by USDA inspectors proved impractical on a commercial basis. Without getting a "Choice" grade label, U.S. traders could not successfully market Canadian table beef; conversely, no U.S. trader could effectively market fresh Canadian table beef in the U.S. using Canadian A-1, A-2 grade labels because these symbols were not understood in the U.S. trade and were not officially recognized.

This situation may, in the short term, restrict competitiveness of Alberta beef packers in selling their beef production to eastern Canada (against growing U.S. competition) or into the U.S., but it will ensure plentiful supplies of Alberta beef being available for sale in neighboring British Columbia.

b) *Description of Grading System Differences*

i) Canada

Canada has had for many years a grading system which identifies beef carcasses by a simple, effective classification system.

Quality grading is defined by a top category "A" (for specified conformation and texture, by type) for steers and heifers down to a "D" for cows. "B" is a lower quality steer. Within each grade of A, B, C, D there are four different measurements of fat content, numbered from 1 (very light fat cover/finish) to 4 (heavy fat cover). Marbling has not been measured, but provision exists in regulations to add this factor after March 31, 1992.

The favoured objective of Canadian feedlots producing finished cattle has been A-1 and A-2 carcasses, measuring top quality texture/conformation with just a light cover of external salvage fat and very little marbling. By contrast, fat cows often are graded D-3 or D-4.

The beef grading system has served Canada well over many years, giving every carcass a clearly described definition. Both consumers and traders have recognized A-1, A-2 as the "most favoured" type of graded beef. Canadian consumers have; therefore become accustomed to eating lightly finished steer beef with reasonably good tenderness, while both feedlot finishers and beef packers came to regard "graded cattle" as the A-1 or A-2 type (anything less was regarded as inferior eating quality for steaks and roasts).

The outstanding feature of the Canadian grading system for many years past has been a concise classification of each individual beef carcass, whether being priced at plant, on-the-rail, (for payment to a producer) or being priced to wholesalers/retailers. This pricing system by grade has retained importance because a large proportion of Canadian beef is still traded in carcass form (as sides or quarters), especially in moving surplus beef every week from the west (Alberta) to the east (Ontario, Quebec, Maritime provinces).

The Canadian beef grading system has been consistent for many years, but will be changed during first half 1992, to incorporate additional symbols A-A and A-A-A to measure marbling for the first time (see chart in Appendix E). It is hoped that these marbling symbols will help to sell high quality Canadian table beef in direct competition with U.S. Choice grade beef, but education programs will be needed to do this.

ii) United States

By contrast, beef grading in the U.S. has been less precise (in its commercial application) than Canada's system and subject to some dissatisfaction and controversy within the industry.

A major change occurred during the 1980's when the USDA abandoned its "Good" grade (which the trade had regarded as somewhat inferior and useless in identifying beef to consumers) and substituted the work "select" instead, as a symbol of leaner, lighter-finished beef. The work "Select" has been highly publicized to tell the U.S. consumers about a new "lean image" for beef, but some large supermarkets refused to sell it at times.

The U.S. system uses words (rather than the letter/number codes used by Canada) to apply quality/grade description to beef, as under:

"Prime"	means highly-marbled, top quality beef usually consumed via high-priced restaurants and specialty retail stores.
"Choice"	means a reasonable amount of marbling (for tenderness) and external fat cover, with related standards of texture and conformation.
"Select"	(replacing "Good" grade) means leaner, lighter-finished beef (less fat-less marbling) than choice, with similar texture/conformation. Some people think this is similar to Canada's A-1, A-2 grades, but the comparison is not precise.

The above three grades apply to grain fed steers and heifers. Three other lower grades apply basically to grass fed cattle:

"Standard"	(bulls and cows, usually fat animals)
"Commercial"	(cows)
"Utility"	(mainly boner cows)

Within the top three U.S. grades for fed beef carcasses, there are voluntary "Yield Grade" standards similar to Canada's system of measuring degrees of fat:

Yield Grade 1 is very light fat cover.

Yield Grade 2 is light fat cover and marbling.

Yield Grade 3 is extensive fat cover and marbling.

Yield Grade 4 is excessive/heavy fat.

For many years, up until mid 1980's, choice-grade beef was broadly promoted by most U.S. supermarket chains, with the simple caption in flyer ads "USDA Choice." They shunned the caption "USDA Good" for leaner beef, for fear of confusing consumers (who don't understand the grading system) into thinking "Good" meant "inferior" in practice.

In the mid 1980's when the U.S. cattle industry saw need to promote a new "lean" image to consumers, the word "Good" was changed to "Select" and promoted accordingly. Some supermarkets promoted their own logos of special trimming to reduce visible fat (in table beef cuts) in the eyes of consumers. This has all been part of the overall effort to promote low-fat foods to U.S. consumers.

c) *Impediments of U.S. Beef Grading System*

The U.S grading system has fostered inconsistency of beef quality because:

i) The "Choice" grade covers a very broad range of quality and marbling. Consumers do not find tenderness consistency in the beef they buy.

ii) Some cattle producers (feeder - finishers) have urged packers to pay premiums for Yield Grade 2 choice carcasses, in order to send a "price-incentive" signal to produce this kind of beef. However, such ideas usually fall on deaf ears because a majority of feeders and packers prefer to sell and buy on a system of "price averages".

iii) The feeder uses "average price" negotiating as a ruse to dispose of lower quality animals along with better ones, grouping them together to minimize penalties for the former.

iv) Packers play along because they see opportunity to push down their buying costs by subjective negotiating skills.

v) This system derives from a commodity trading mentality which is production oriented, rather than marketing oriented. Both the feeder and packer try to maximize profit margins on the "buy" side of their dealings, rather than on the "sell" side. Each of them seeks to push volume sales through the marketplace, while trying to keep costs minimal. But they usually share a common desire to get a "choice" grade label on a high percentage of the beef produced.

vi) Because of inconsistencies in U.S. beef caused by this volume philosophy, there has been little success in promoting branded beef sales in the U.S. One such effort to promote branded beef in the U.S. has been the certified Angus Beef Program, whereby black cattle need to satisfy rigid quality specifications. The program works without any USDA grade symbol in the selling pitch, but less than 20% of all black cattle presented for the program prove to be acceptable. Such inconsistency (in this top cattle breed) highlights the flaws of the U.S. grading and beef production system.

vii) The word "Choice" has proven to be a good symbol for promoting export sales of specially selected U.S. beef in the Japanese market. The word "Choice" has become synonymous in advertising by the U.S. Meat Export Federation with U.S. table beef in Japan. There is U.S. resistance to a suggestion of allowing Canadian beef to use the word "Choice" as a description or brand symbol.

d) *Interaction Problems Between U.S. and Canada Concerning Beef Grading*

Canadian table beef (A-1, A-2 grade) is not well known in the U.S., and not easy to sell as such. There have been moves made to establish "Grading Equivalence" between U.S. and Canada to use common symbols to facilitate cross-border movement in both directions.

However, elements in the U.S. beef industry oppose the words "Choice" and "Select" being applied to Canadian beef, especially if used for export to Japan.

U.S. table beef has in the past two years, sold in Canada in increasing volume without being graded. In the trade, it is called "No roll beef" (meaning no ribbon grade stamp on the meat surface) and has become well accepted by HRI users, especially in eastern Canada. The Canadian Meat Council, supported by its members, has advocated that such U.S. beef should be designated "Not graded" in clear labeling on boxes, to avoid trading misrepresentation, especially if displayed in supermarkets which traditionally use signs stating "Canada A-1, A-2 grade" in meat departments. A corollary to this is that some Canadian supermarkets are removing the "A-1, A-2 grade" signs.

There appears little likelihood of grading equivalence being agreed between the two countries in the immediate future, because of U.S. resistance to sharing use of the words "Choice" or "Select". Absence of a Canadian grading equivalence of U.S. table beef is not inhibiting Canadian sales, but it is inhibiting efforts to market Canadian table beef in the U.S., especially in supermarkets.

Canada will officially add a marbling category to its grading system in 1992. This is expected to help counter competition from marbled U.S. beef entering Canada, and to enhance appeals of Canadian table beef to HRI customers in the U.S., but education programs will be needed. Possibly Cargill will aid this process by coordinating with its U.S. parent affiliate to help market more Canadian table beef in the U.S.

e) *Implications of Incompatibility between U.S. and Canadian Grading Systems*

i) It currently hinders Canada's sale of carcass beef in U.S. markets, but not vice versa.

ii) It results in surplus Western Canada table beef production having to find outlets in Eastern Canada. This can depress prices, especially in the market place of Eastern Canada.

iii) It tends to encourage cattlemen to seek sales of live cattle to the U.S. feedlots or slaughter/processors to avoid grading problems.

6. *Transportation*

Transportation costs in British Columbia vary widely depending on the distance and the terrain of the haul. Backhauls can lessen the cost of transport. The traditional movement of northern calves was south to the Thompson-Okanagan and Fraser Valley. From there, the finished cattle were taken to slaughtering facilities in B.C., Alberta, and Washington. Now a large proportion of Peace and Bulkley calves move east directly to Alberta.

Table III-17 lists freight rates for cattle transportation in and out of B.C. The rates are based on dollars per hundred weight ($/cwt). In some areas, trucking charges is by the hour from leaving the truckers business until return to the business. Charges range between $65 and $75 per hour depending on the size of the truck. Rates for local hauls in the Fraser Valley is between $2.00 and $3.25/head for finished cattle.

Transportation to Fraser Valley slaughter facilities are least expensive for finishers in all regions in B.C. except the Peace. However, the higher costs of transportation to High River, Alberta or Pasco, Washington can be offset by higher market prices of only $.10/cwt. to $1.25/cwt. The similarity in freight costs from Armstrong to any of the three slaughter locations explains why Okanagan Valley finishers will market to Alberta and Pasco, Washington.

Table III – 17: British Columbia, Alberta and PNW Cattle Hauling Freight Rates, Fourth Quarter, 1991

($/cwt.)

How to read rate schedule.
Rate from Quesnel to Armstrong is $2.10/cwt.

	Dawson Creek	Vanderhoof	Quesnel	Williams Lake	Cache Creek	Kamloops	Merritt	Armstrong	Fraser Valley	High River, AB	Pasco, WA
Vanderhoof	1.76										
Quesnel	1.82										
Williams Lake	2.24										
Cache Creek											
Kamloops	3.00	2.50	1.85	1.50							
Merritt											
Armstrong		2.75	2.10	1.75							
Fraser Valley	3.15	2.75	2.50	2.25	1.50	2.00	1.50	2.00			
High River, AB	3.50	3.50	3.15	3.00	2.50	2.35	2.50	2.10	3.00		
Pasco, WA	4.50	4.00	3.65	3.50	2.75	2.50	2.75	2.25	3.25	3.00	
Edmonton, AB	2.10										

Assumption: 55,000 pound load in truck

The rate table suggests that calves that are finished in the Thompson-Okanagan, Cariboo, and Bulkley-Nechako regions enable the owner to sell to the best market available. The freight rates also indicate that it is less expensive to move calves from Vanderhoof, Quesnel, and Williams Lake to the Peace River region (Dawson Creek) than to the Fraser Valley. Cattle backgrounded or finished in the Peace region take advantage of the local barley and can market the cattle to any of the slaughter facilities offering the highest price.

To illustrate how the combination of feed and transportation costs affect the profitability of raising cattle, a comparison of inbound freight, backgrounding and finishing feed costs, and outbound freight is performed for locations at Dawson Creek, Kamloops, Armstrong, and the Fraser Valley (Table III-18). The simulation reveals that feed costs per head is the largest variable component to the profitability of feeding cattle. From the table, the best feeding area is clear.

- Dawson Creek, from logistics perspective offers least cost or highest return.

It is recognized it is less expensive to transport a 500 lb. (227 kg) calf over a long distance than to transport the animal when finished at 1,100+ lbs. (499+ kg). Such intuitive revelation would argue for cattle feeding in the Fraser Valley and to a lesser extent, the Thompson-Okanagan. From the table, Fraser Valley is identified with the least expensive freight cost per head.

Table III – 18: Feed and Freight Cost Comparisons (Per Head)

SIMULATION: Finishing in Fraser Valley

Assumptions:

Backgrounder:	Raised from 500 to 800 lbs. in 171 days Barley - 5 lbs./day Silage - 23 lbs./day
Finishing:	Finished from 800 to 1129 lbs. in 94 days Barley - 14 lbs./day Silage - 8.4 lbs./day Wheat Screenings - 5.6 lbs./day

Feed Cost	Bkg. -	Barley	$38.81
Per Head:		Silage	72.76
	Fin. -	Barley	59.75
		Silage	14.61
		Wht Scrn	22.63
			$208.56

INBOUND FREIGHT FOR CALVES FROM:

OUTBOUND FREIGHT TO SLAUGHTER FACILITY AT:

Bulkley	Cariboo	Thmp-Okn		
13.75	11.25	10.00	Trip Cost	
224.81	222.31	221.06	2.50	Fraser Valley
256.12	253.62	252.37	33.81	High River, AB
259.00	256.50	255.25	36.69	Pasco, WA

Matrix Total = Feed Cost + Inbound Freight + Outbound Freight

SIMULATION: Finishing in Kamloops

Assumptions:

Backgrounder:	Raised from 500 to 800 lbs. in 171 days Barley - 5 lbs./day Silage - 23 lbs./day
Finishing:	Finished from 800 to 1129 lbs. in 94 days Barley - 18 lbs./day Silage - 12 lbs./day

Feed Cost	Bkg. -	Barley	$38.30
Per Head:		Silage	64.89
	Fin. -	Barley	75.80
		Silage	18.61
			$197.60

INBOUND FREIGHT FOR CALVES FROM:

OUTBOUND FREIGHT TO SLAUGHTER FACILITY AT:

Bulkley	Cariboo	Thmp-Okn		
12.50	7.50	2.50	Trip Cost	
232.68	227.68	222.68	22.58	Fraser Valley
236.63	231.63	226.63	26.53	High River, AB
238.33	233.33	228.33	28.23	Pasco, WA

Matrix Total = Feed Cost + Inbound Freight + Outbound Freight

Table III – 18: Feed and Freight Cost Comparisons (Per Head) – Cont'd

SIMULATION: Finishing in Armstrong

Assumptions:

Backgrounder:	Raised from 500 to 800 lbs. in 171 days Barley - 5 lbs./day Silage - 23 lbs./day
Finishing:	Finished from 800 to 1129 lbs. in 94 days Barley - 18 lbs./day Silage - 12 lbs./day

Feed Cost Per Head:	Bkg. -	Barley	$38.30
		Silage	64.89
	Fin. -	Barley	75.80
		Silage	18.61
			$197.60

INBOUND FREIGHT FOR CALVES FROM:

OUTBOUND FREIGHT TO SLAUGHTER FACILITY AT:

Bulkley	Cariboo	Thmp-Okn		
13.75	8.75	2.50	Trip Cost	
233.93	228.93	222.68	22.58	Fraser Valley
235.06	230.06	223.81	23.71	High River, AB
236.75	231.75	225.50	25.40	Pasco, WA

Matrix Total = Feed Cost + Inbound Freight + Outbound Freight

SIMULATION: Finishing in Dawson Creek

Assumptions:

Backgrounder:	Raised from 500 to 800 lbs. in 171 days Barley - 5 lbs./day Silage - 23 lbs./day
Finishing:	Finished from 800 to 1129 lbs. in 94 days Barley - 20 lbs./day Silage - 8 lbs./day

Feed Cost Per Head:	Bkg. -	Barley	$26.33
		Silage	29.50
	Fin. -	Barley	57.90
		Silage	5.64
			$119.37

INBOUND FREIGHT FOR CALVES FROM:

OUTBOUND FREIGHT TO SLAUGHTER FACILITY AT:

Bulkley	Cariboo	Thmp-Okn		
10.00	10.00	15.00	Trip Cost	
164.93	164.93	169.93	35.56	Fraser Valley
168.89	168.89	173.89	39.52	High River, AB
180.18	180.18	185.18	50.81	Pasco, WA
153.08	153.08	158.08	23.71	Edmonton, AB

Matrix Total = Feed Cost + Inbound Freight + Outbound Freight

- Fraser Valley has an inbound and outbound cost per head that can be as low as $11 to $14 depending if the calves originated in the Thompson-Okanagan and are marketed in the Fraser Valley.

The fallacy in the preceding statement is that the Thompson-Okanagan and Fraser Valleys are significantly higher in feed costs than the Peace River area and the entire province of Alberta. The similar higher costs only suggest that both areas are at a competitive disadvantage. However, finishers in the Thompson-Okanagan have a price alternative to where they market cattle. The Fraser Valley feeder is restricted to the Fraser Valley slaughter plants for marketing cattle due to high transportation costs to the other slaughter plants.

Finishers in all regions other than the Fraser Valley have the opportunity to market finished cattle to the slaughter facility which offers the highest net price (after deducting freight). Since little transportation expense has been incurred in acquiring the backgrounding and finishing cattle, the relatively similar transportation costs allows for slaughter market arbitrage. However, the Fraser Valley finisher is locked into the Fraser Valley slaughter plants to market the cattle. The added freight costs do not allow for marketing to alternative slaughtering plants unless local market prices are $3.00/cwt. (6.61 cents/kg) or lower than the Alberta or Washington prices.

The Fraser Valley finisher is a captive supplier and is in a situation where supply side market competition does not affect prices, rather retail demand in a local market controls the slaughter market price. The Fraser Valley slaughter plants obviously know that the cattle can not be marketed more profitably anywhere out of the area net of $2.50 to 2.75/cwt. (5.52 to 6.06 cents/kg) additional freight costs.

7. *Societal Factors*

a) *Environment*

The B.C. Ministry of the Environment, Lands and Parks is particularly concerned with animal waste in newly urbanized areas. Vancouver and the Fraser Valley have already experienced population increases. The Okanagan Valley is expected to increase population from 200,000 to over 500,000 early in the next century. Human health concerns and recreational opportunities will likely prevail when questions of pollution are directed against the beef industry. Ultimately, B.C. Ministry of Environment, Lands and Parks has the legal right to shut down operations should discharge levels become unacceptable.

Environmental laws are being proposed that could change farming practices of the beef producer in the Province. Under this proposed legislation, the Code of Agricultural practice would be incorporated. To assist with the added costs of environmental control, low interest loans will be made available by government to assist farmers. See Section IV-E-10 for discussion of this assistance program.

The Okanagan Lake region is one of the most sensitive ecological systems in all of Canada. The water in the Okanagan and Kalamalka Lakes has very little turnover, resulting in phosphorous discharged 20 years ago still retained in the water. According to the B.C. Ministry of Environment, Lands and Parks office in Penticton, Okanagan Lake is at its objective for acceptable phosphorous levels. Kalamalka Lake is at or below its objective level. Humans and animal agriculture are not the only sources of pollution for the lakes, orchard chemicals and logging sediments are also monitored for effects on the water.

The lack of large population centers affords producers in the northern regions the opportunity of farming practices relatively removed from urban pressures that encourage environmental action.

Beef producers in B.C. should be aware that environmental and pollution controls will only become more stringent, particularly in the Fraser Valley and Okanagan areas. Decisions to expand and/or diversify into other animal or chemical intensive endeavours must factor in the added costs of pollution control. On the other hand, proper eco-management should allow agriculture and humans to co-exist in all areas of B.C. Ultimately however, the health of the citizenry will be the determining factor when decisions concerning pollution from animal agriculture are made.

b) *Animal Rights*

B.C. beef producers voiced concern about animal rights activists, but further said they personally had not been affected by any animal rights organizations to date. Many producers did expect to have animal rights issues becoming important in day to day operations.

In a pro-active move to prevent or counteract potential problems, the B.C. Cattleman's Association published a document calling for good animal husbandry along with prescribed methods to use and avoid using while raising cattle. This document was a direct result of real or perceived problems which may come from animal rights groups operating in Canada and the United States.

Currently, five animal rights or animal welfare groups exist in Canada and eight in the U.S. (More are probably organized but were not identified during this study.) The groups in Canada are not well financed but boast of growing memberships (though some refused to reveal how large was its membership). Those in the United States are well financed and have growing memberships. The Canadian groups and purpose are:

1) Animal Alliance of Canada

Purpose:	To reduce and eventually eliminate through educational and political avenues the use and consumption of animals.
Membership:	7,000
Budget:	N/A (Only a year old, donations cover publishing and mailing costs. Labour is volunteer.)

2) Animal Defenders and Anti-vivisection Society of Canada

Purpose:	To eliminate the use of animals in research and testing.
Membership:	N/A
Budget:	N/A

3) ARK II

Purpose:	To promote and protect the rights of all animals and foster their individual liberties through direct action, political action and public awareness campaigns.

Membership: 3,500
Budget: No paid staff, all donations used for publications and mailings.

4) Canadian Farm Animal Care Trust (CanFACT)

Purpose: To improve the welfare of animals in Canada from conception to slaughter, (Group does not seek the elimination of animal consumption by humans, but to ensure humane practices are followed in rearing animals.
Membership: N/A
Budget: N/A, One paid staff member and receiving grants from two foundations.

5) Life Force

Purpose: Refused response for this study.
Membership: N/A
Budget: N/A

The U.S. animal rights groups are:

1) People for the Ethical Treatment of Animals (PETA),

Purpose: To reduce and eventually eliminate the consumption of animals.
Membership: 275,000
Budget: Over $US 5 million

2) Humane Society of the U.S.

Purpose: To alleviate animal suffering and improve the care and treatment of animals in society.
Membership: Over 1,000,000
Budget: Over $US 10 million

3) American Society of the Prevention of Cruelty to Animals

Purpose: To provide effective means to prevent animal cruelty throughout the U.S., including companion and work animals, research animals, wild animals, food animals, and animals for entertainment.
Membership: Over 400,000
Budget: $US 18.5 million

4) Farm Animal Reform Movement (FARM)

Purpose: Short term, to improve conditions for livestock; long term, to persuade people not to raise animals for food. Ultimately, FARM wants a vegetarian society.
Membership: 10,000
Budget: not disclosed

5) Farm Sanctuary

Purpose: To end "factory farming" and the abuses of animal agriculture; end all practices of using animals as tools of production; and promote the rights of animals to basic humane care

Membership: 5,000
Budget: $US 150,000

6) Food Animal Concerns Trust (FACT)

Purpose: To do away with confinement husbandry systems. FACT contracts with farms to follow its husbandry guidelines, and then helps those farmers market their products.
Membership: 16,000
Budget: $US 900,000

7) Animal Welfare Institute

Purpose: To promote humane treatment of animals, preserve endangered species and end animal exploitation.
Membership: 8,000
Budget: $US 468,000

8) Humane Farming Association

Purpose: To eliminate the suffering of farm animals and promote humane farming practices; spearheads a national boycott of milk-fed veal.
Membership: 55,000
Budget: $US 500,000

The money, membership, and organization is to a level where these organizations should be taken seriously. They have media exposure, personality endorsements, and political lobbies. However, the amount of penetration into Canada is limited. All the organizations that were not specific to the United States (i.e., Humane Society of the U.S.) said that they had some members from Canada, but had not focused efforts in Canada. The lack of focus to Canada will probably continue since the organizations' goals have not been realized in the U.S.

Even though Canada's animal rights groups are at an embryonic stage of development, the groups pace of growth could accelerate should the public perceive a need to change the treatment of animals. The beef industry in B.C. should (continue to) educate its constituents in the humane treatment of beef animals. The industry should take pro-active steps to prevent animal rights organization(s) from levying complaints against beef producers. Given the situation, the best defence is a good offence.

c) *Land (ALR, Crown Land)*

Land for the British Columbia beef industry is both abundantly provided but also controlled by the government. Crown rangeland totalling 8.3 million hectares is provided for grazing. On the other hand, the Agricultural Land Reserve law restricts or forbids the sale of farm land for non-agricultural uses.

The Province of British Columbia contains a surface area of 94,780,000 hectares. According to the Ministry of Lands, Parks and Housing, over 92% of the Province is Crown provincial land (B.C. Ministry of Lands, Parks, and Housing, 1985). Eighty two percent of all land is under woody vegetation, grasses and other non-wood plants and thus may be capable of sustaining livestock grazing. However, the use of Crown Land is sought by many users besides beef producers. Other users include: recreation, tourism, mining, conservation, wildlife, timber farming, to name the more important. These competing users will likely seek Crown Land currently used by the beef industry.

The Agricultural Land Reserve began in 1973 as a legislated method of protecting farm land, primarily in the Fraser Valley and Okanagan from urban encroachment onto agricultural land. The law, designated 4,721,295 hectares as agricultural land. After the inflationary periods of the 1970's, farmers recognized that the law prevented the sale of land at its highest market value. This situation was especially true in the fast growing Fraser Valley region. In the mean time, the law has became popular with urban dwellers due to its preservation of "open" agricultural land. From the initiation of the law through January 1988, only 21,398 hectares in the ALR have been excluded on request by individuals. Exclusions are granted by the Agricultural Land Commission.

As indicated above, the ALR has had significant implications for cattle finishers in the Fraser Valley. Operators own land estimated at $50,000 per acre ($123,550/hectare) in a non-ALR open market. However, only $5,000 per acre ($12,355/hectare) can be received at its agricultural value. Economically, this situation creates unintended incentives and disincentives.

Property owners are not paid an equitable return for owning the land during a lengthy time frame, since the increased commercial value is disallowed by the ALR. The land owner also has the incentive to hold onto the land (and the farming operation) in hopes that some day the law will change. Presently, the ALR does not look to change in the near future especially with the re-establishment of the New Democratic Party which originally brought ALR into existence.

Strengthening environmental laws and the ALR have created conflicting signals for beef operators in the Fraser Valley. The increased costs required to meet regulation established under environmental laws may make it increasingly difficult for animal agriculture in the Fraser Valley, particularly near Vancouver and its suburbs. On the other hand, the ALR retains these operators for reasons cited above. Since the ALR is the de facto law controlling land value and pricing, this study's findings and conclusions are based on the view that the ALR is a law that will perpetuate indefinitely.

IV. FINANCIAL PROGRAMS

A. BACKGROUND

1. *Historical Development*

Historically, Canadians demand a larger role from government in the livestock sector than Americans, where government support and stabilization mechanisms are focussed on grain. The Canadian setting is complicated because the constitution sets out a joint federal and provincial responsibility for agriculture. Much of the debate over uneven "playing fields" began during the 1970's when provincial governments had good fiscal capacity and some provincial governments like Quebec began to pursue some form of food self-sufficiency.

B.C. was an early provincial intervenor with introduction of the Farm Income Insurance supports by the government of the day in the mid 70's. It was land use policy that lead to a fundamental trade-off between government and the B.C. cattlemen. The province narrowed land resale opportunities by establishing the Agricultural Land Reserve (ALR), which slowed capital gain returns from ranching. To compensate for lost freedom to sell property, the B.C. government established farm income insurance (FII) or "top-loading" programs to maintain incomes at an adequate level and encourage additional self-sufficiency for food production within the province.

Competitive direct subsidies such as FII, and Alberta's early action in the credit subsidy area, combined with the federal decision not to change the Crow Rate, caused the Alberta government to introduce additional provincial supports to offset the Crow burden to the livestock sectors. Inter-provincial trade barriers or subsidies were on the increase and large livestock industry provinces like Alberta and Ontario were lobbying for a "level playing field".

While during the early 1980's, provincial government fiscal constraints began to scale down the FII support in B.C., the Alberta introduction in the mid 1980's of a $21/tonne Crow Benefit Offset shifted the worry about level playing field to B.C. Alberta has scaled back that program to $10 per tonne and is in a general deficit cutting mode, started much earlier in B.C. A later section will report on the 1989 and 1990 net benefits from provincial and federal governments.

2. *Present Environment*

Late 1991 is a time of many transitions in the role of Canadian government and in the economics of the beef business. This has complicated the review of government programs. Hence, a number of assumptions and scenarios are used. Clarity of vision about government's appropriate role is very difficult for B.C. beef industry leaders because of developments at 6 levels:

a) At the Geneva GATT talks, progress in resolving grain export pricing subsidies seems very likely by early 1992. An agreement may require changes to major federal Canadian policies like the Crow rates and marketing boards.

b) Canada's intense constitutional debates reflect a genuine desire to lower inter-provincial barriers to trade and thus caution additional B.C. subsidies to the beef sector. Furthermore, at least two broad visions of governments' role are emerging for the sharing of risks and economic development costs -- one vision embraces a stronger federal role, the other calls for more decentralization to the provinces.

c) The recession and especially low grain prices has shaken the confidence of many in agriculture, resulting in demands by farmers (especially in grain) for large government subsidies in addition to those provided by formulated programs like GRIP. Both fiscally constrained provincial and federal governments are rethinking programs that affect grain. The federal government has committed an additional $800 million. Implementation of this grain promise will especially affect the Peace River of B.C., pricing and use of farm fed grain and potentially grain prices across B.C. The broad economic recession may place limits on further initiatives for agriculture in B.C.

d) Renewed countervail action by the United States in hogs over the effect of National Tripartite programs for hogs again questions the ability to maintain various National Tripartite Stabilization Programs (NTS) and free north-south trade under the Canada - U.S. Trade Agreement (CUSTA). The issuing in October, 1991 of very large NTS payments for slaughter cattle would appear to create the potential for American countervail actions in beef by mid 1992. This unfortunate threat limits the degrees of freedom for all Canadian governments to act. B.C. has ample experience to understand these impacts as a result of prior countervail action in lumber.

e) In the consultants' opinion, at the heart of Canadian debates over the constitution, recession, and agriculture are unrealistic expectations of government. Governments just don't have the leadership, regional or national consensus, and fiscal resources to protect citizens (including ranchers, feedlots, and packers) from globalized economic change to the degree desired by many citizens. As the Economic Council of Canada has said, governments at all levels are trying to reduce citizen expectations of government.

f) The October, 1991 election may signal shifts in the willingness of the provincial government to help the livestock sector. Campaign commitments to restrict the ALR from uses such as golf have been implemented and hence restrict exit alternatives of cattlemen. Additional promotion of B.C. food products was a campaign issue. Expansionary views of provincial help to the beef sector could develop from commitments to aid the tree fruit sector, yet equivalent support would be very expensive if extended to beef and the new government also finds the deficit higher than expected.

3. *Approach of Study Team to Evaluating Government Financial Support Programs*

As outlined in the workplan, the KenAgra side of the consulting team sought to understand and describe the significant provincial and federal programs in B.C., and Alberta. Second, a review for understanding the Washington state programs was conducted. Third, an advisory committee of leaders from the BCCA, BCACF, and BCMAFF was formed. This ad hoc group provided advice as individuals (not as representatives of their respective associations) in two meetings - the first in September 1991 and the second in November 1991. This group provided the consulting team excellent interaction on the perceptions of government's current role, research priorities, and implications of some alternatives.

Other members of the consulting team completed the examination of competitiveness parallel to the government program review. Once it became clear what conclusions would be regarding the competitiveness of the beef sectors, revisions were made to this program section.

4. *Conflicting Goals of B.C. Agricultural Policy*

The 1970's and 1980's included significant innovations and interventions by B.C. governments in the beef economy that are coming to a head during 1991. The BCCA committee (BIDC) in August 1991 spoke more broadly than just of government when it summed up the industry mission statement as:

"To create an economic environment whereby all three sectors of the Beef Industry in British Columbia be profitable and continue to grow in a market responsive manner which is environmentally sound, uses available technology and the resources of the Province on a sustainable basis."

The Council went on to identify the "lack of a level playing field with other production areas" as a major constraint to cow-calf, backgrounding/finishing, and slaughtering/packing sectors. It noted "government intervention which creates temporary profits in one sector at the expense of another is unacceptable and is to be discouraged". The responsibility of government is to maintain a level playing field (with respect to government assistance) ... through "monitoring of support programs in other jurisdictions ... and appropriate action ... to establish a level playing field." The above statement guided this study, particularly this review of government support programs. The BCCA committee report suggested a consensus in B.C. and clarity of thought far ahead of other provinces.

Significant personnel changes in BCMAFF at the staff and political levels during the last three years left considerable uncertainty for the beef sector. Yet recent appointments to senior positions and a new minister with a four year mandate should provide the potential for policy certainty once the industry takes action on this report.

The conflicting views of B.C. beef industry goals and policies that lead to the BCCA committee (BIDC) statement were debated at the time of the national "Growing Together" agricultural policy review. The national review between 1989 and 1991 focussed around numerous issues like competitiveness, safety nets, transportation policy, and financing and managing the family farm. The federal-provincial ministers who lead the national review established four pillars of reform for this new vision of agriculture that the consultant team also considered:

a) More market responsiveness,

b) Greater self-reliance in the agri-food sector,

c) A national policy which recognized regional diversity, and

d) Increased environmental sustainability

Two major federal-provincial programs came out of that policy review that were only implemented in 1991. GRIP (Gross Revenue Insurance Program) came first, was focussed on grain. NISA (Net Income Stabilization Account) was designed as an Income Support Program, without much trade distorting features and hence "green" under GATT. NISA was introduced in 1991 to support grain producers 1990 incomes yet pressures developed such that it now covers farm fed grains. Considerable national pressure grew in 1991 for including livestock in NISA and this was accepted in principle at the Kananaskis meeting of federal-provincial ministers in July, 1991. It is clear the drive for equal treatment between provinces is affecting the form of agriculture's joint constitutional responsibility. The GRIP and NISA issues to be explored more later also point to sensitivities about equity between livestock and grain sectors.

B. U.S. Government Programs

As the study terms of reference focus on Canadian government differences, this section will be brief. U.S. government supports to livestock are quite limited for two reasons: (1) the consistent free enterprise philosophy of the National Cattlemen's Association which stretches into federal and state laws; and (2) the focus of American farm policy on support for grain, rather than livestock sectors. Explicit U.S. livestock policies that may affect Canadian competitiveness include (in declining importance):

- grading
- inspection
- the Meat Import Law
- dairy adjustment policies
- competition policy
- irrigation development
- state environment protection
- state or local economic development loans or grants
- food safety regulations

Income tax policy has eliminated most tax provisions that had artificially attracted urban investors to place cattle in feedlots; hence any adverse effect on the competitive position of family farm operations was removed. The U.S. Export Enhancement Program subsidizes the export movement of barley out of Montana, and Idaho and may create a local feed shortage. In recent years, this phenomena has enabled Canadians to market small quantities of barley to Washington state, placing Pasco feedlots at a slight disadvantage to B.C. because there is neither Feed Freight Assistance nor permissible movement under subsidized Crow rates. Since the Export Enhancement Program may change under GATT negotiations it should not impact feed costs to PNW feeders significantly.

From our cursory review, none of the above livestock policies other than grading and inspection (discussed elsewhere in this report) create significant competitive difficulties or advantages for the B.C. beef industry.

C. Net Benefit Programs

1. *Introduction*

Among the B.C. beef industry there is a belief that the playing field is not level with Alberta -- it is believed that provincial subsidy programs have given Alberta packers, finishers and cow-calf operators an advantage over businessmen in B.C. When the consultants checked, the national authorities who have done interprovincial comparisons of government "Net Benefits" for the red meat industry since 1988, the levels of support were similar between Alberta and British Columbia and; therefore, the playing field appears relatively "level". Tables IV-1 and IV-2 show for 1990 and 1989 that B.C. actually had slightly more federal and provincial assistance than Alberta in both years. The entries reflect the dollars of government aid per $100 of adjusted cash revenue (approximately the same as gross revenue). These tables and the methodology will be explained in more detail later in this report.

While this data has been public for several years and one may have expected B.C. attitudes to recognize the playing field is level, the carefully prepared interprovincial comparisons were only mentioned in the industry press in early 1991. When presented to the study advisory committee in September, the consultants learned that indepth reading of the net benefit research had not been done by industry leaders and there was widespread disbelief or questions in several areas. First, were the numbers "accurate" or "sound" and reflecting "all" Alberta assistance? Secondly, industry leaders especially from the BCACF repeatedly indicated a dollar spent for "top-up" after the cattle were sold had less impact on producer decisions than predictable dollars received up front before the cattle were purchased for backgrounding or finishing (as an example for assisting in the purchase of inputs such as barley in the Alberta Crow Benefit Offset program).

The consultants then reviewed the 1988, 1989, and 1990 procedures for determining "Net Benefits" and interviewed Dr. Bruce Kirk and Jack Gellner, the two key Agriculture Canada managers who carry out the careful audit of benefits received in each province. The following was learned.

The net benefit procedure necessitated the establishment of a Committee of Experts. This committee is responsible for calculating net benefits in each province, as well as monitoring compliance with the NTS ceilings and program developments. It is also responsible for establishing program definitions and for developing, maintaining and refining the methods to be used in measuring the level of support in each province. It became clear to the study team that the introduction in 1989 of this Committee of Experts should have given the entire exercise added credibility. Yet it was not until 1991 that a B.C. representative, Dr. Rick Barichello of the University of British Columbia, became involved. The consultants could find no evidence that he reported back to beef producers. Additionally, his University of British Columbia schedule caused him to miss many meetings (including November 1991). In view of the B.C. concern over level playing field, the study team recommends steps be taken to insure consistent input by an economic expert representing B.C. who can make time available to insure periodic reporting to the beef industry.

Table IV – 1: 1990 Net Benefits to Beef Cattle Sector, in Order of Importance to B.C.

Program	Type of Transfer	Line of Defence	Gov't Level	Alberta ($/ACR)	B.C. ($/ACR)	BC minus Alberta ($/ACR)
Farm Income Insurance	FT	2	P	——	$2.14	$2.14
Tripartite Program (NTSP)	FT	2	F/P	$1.86	$1.77	($0.09)
Farm Property Tax Exemption	FT	1	P	——	$0.91	$0.91
E.E.C. Beef Countervail	FTE	1	F	$0.68	$0.69	$0.01
Credit Programs	FT	1	F	$0.32	$0.54	$0.22
Range Improvement/Management	FT	1	P	$0.04	$0.47	$0.43
ERDA (Agriculture Canada)	FT	1	F/P	$0.01	$0.39	$0.38
Feed Freight Assistance	FT	1	F	——	$0.26	$0.26
C.W.B. Price Pooling	FTE	1	F	$0.30	$0.13	($0.17)
Land Development Assist (Loan)	FT	1	P	——	$0.13	$0.13
Industrial Science Technology Canada (ISTC)	FTE	1	F/P	$0.00	$0.06	$0.06
Farm Debt Review Act	FT	3	F	$0.08	$0.05	($0.03)
Motor Fuel Tax Exemption	FT	1	P	$0.23	$0.05	($0.18)
Feed Grain Market Development Program	FT	1	P	——	$0.00	$0.00
Livestock Protection Act	FT	3	P	——	$0.00	$0.00
Fuel Tax Rebate	FT	1	F	$0.01	$0.03	$0.02
Rehabilitation of Boxcars	FTE	1	F	($0.04)	($0.02)	$0.02
Corn Countervail	RTE	1	F	($0.06)	($0.03)	$0.03
Western Grain Stabilization Act (WGSA)	FT	2	F	($0.46)	($0.05)	$0.41
NTS producer fee	FT	2	P	——	($0.13)	($0.13)
Purchase/Lease Of Hopper Cars	FTE	1	F	($0.48)	($0.21)	$0.27
Western Grain Transportation Act (WGTA)	FTE	1	F	($3.67)	($1.44)	$2.23
Subtotal				($1.18)	$5.74	$6.92
1990 ALBERTA NET BENEFIT PROGRAMS:						
Prairie Branch Line Rehabilitation	FTE	1	F	($0.17)	——	$0.17
Irrigation (PFRA)	FTE	1	F	$0.00	——	$0.00
Livestock Development Program	FTE	1	P	$0.00	——	$0.00
Agricultural Lime Freight Assistance	FT	1	P	$0.00	——	$0.00
Health of Animals Act	FT	3	F	$0.01	——	($0.01)
Assistance to Producer Organizations	FTE	1	P	$0.01	——	($0.01)
Western Economic Diversification	FTE	1	F/P	$0.01	——	($0.01)
Livestock Predator Compensation	FT	3	F	$0.02	——	($0.02)
Irrigation	FTE	1	P	$0.10	——	($0.10)
Loan Guarantee Program	FT	1	P	$0.10	——	($0.10)
Capital Grants: On-Farm	FT	1	P	$0.10	——	($0.10)
Incentive Earned Rebate	FT	1	P	$0.17	——	($0.17)
Fertilizer Price Protection	FT	1	P	$0.18	——	($0.18)
Capital Grants: Off-Farm	FTE	1	P	$0.24	——	($0.24)
Lower Farm Assessment & Rebate	FT	1	P	$0.29	——	($0.29)
Fuel Distribution Allowance	FT	1	P	$0.32	——	($0.32)
Lower Farm Assessment & Exempt	FT	1	P	$0.59	——	($0.59)
Interest Rate Subsidy	FT	1	P	$0.95	——	($0.95)
Crow Benefit Offset Program	FT	1	P	$1.87	——	($1.87)
Farm Credit Stability Program	FT	1	P	$1.97	——	($1.97)
Subtotal				$6.76	$0.00	($6.76)
TOTALS				$5.58	$5.74	$0.16

Source: Committee of Experts, November draft

Legend: FT = financial transfer, FTE = financial transfer equivalent, F = Federal, P = Provincial, F/P = Federal/Provincial, ( ) is a disbenefit.

Table IV – 2: 1989 Net Benefits to Beef Cattle Sector, in Order of Importance to B.C.

Program	Type of Transfer	Line of Defence	Gov't Level	Alberta ($/ACR)	B.C. ($/ACR)	BC minus Alberta ($/ACR)
Tripartite Program (NTSP)	FT	2	F/P	$2.58	$2.35	($0.23)
Farm Income Insurance	FT	2	P	——	$2.26	$2.26
Farm Property Tax Exemption/Programs	FT	1	P	$1.02	$0.84	($0.18)
Range Improvement/Management	FT	1	P	$0.04	$0.30	$0.26
E.E.C. Beef Countervail	RTE	1	F	——	——	——
Credit Programs	FT	1	F	$0.35	$0.47	$0.12
ERDA (Agriculture Canada)	FT	1	F/P	——	$0.00	$0.00
Feed Freight Assistance	FT	1	F	——	$0.29	$0.29
C.W.B. Price Pooling	FTE	1	F	——	$0.00	$0.00
Industrial Science Technology Canada (ISTC)	FTE	1	F/P	$0.00	$0.00	$0.00
Land Development Assist (Loan)	FT	1	P	——	$0.16	$0.16
Farm Debt Review Act	FT	3	F	——	——	——
Motor Fuel Tax Exemption	FT	1	P	——	$0.03	$0.03
Fuel Tax Rebate	FT	1	F	$0.04	$0.02	($0.02)
Rehabilitation of Boxcars	FTE	1	F	——	——	——
Corn Countervail	RTE	1	F	($0.16)	($0.04)	$0.12
Western Grain Stabilization Act (WGSA)	FT	2	F	($0.87)	($0.05)	$0.82
Purchase/Lease Of Hopper Cars	FTE	1	F	——	——	——
NTSP Producers' Fee	FT	2	P	——	($0.11)	($0.11)
Western Grain Transportation Act (WGTA)	FTE	1	F	($5.90)	($1.67)	$4.23
PROGRAMS NOT LISTED AS 1990 NET BENEFITS TO B.C. PRODUCERS:						
Prairie Branch Line Rehabilitation	FTE	1	F	——	——	——
Irrigation (PFRA)	FT	1	F	$0.00	——	$0.00
Livestock Development Program	FTE	1	P	——	——	——
Lime Freight Assistance	FT	1	P	$0.00	——	$0.00
Health of Animals Act	FT	3	F	——	——	——
Assistance to Producer Organizations	FTE	1	P	——	——	——
Western Diversification	FTE	?	F/P	$0.00	——	$0.00
Livestock Predator Compensation	FT	3	P	$0.02	——	($0.02)
Irrigation	FT	1	P	$0.11	——	($0.11)
Loan Guarantee Programs	FT	1	P	$0.21	——	($0.21)
Capital Grants: On-Farm	FT	1	P	$0.11	——	($0.11)
Incentive Earned Rebate	FT	1	P	——	——	——
Fertilizer Price Protection	FT	1	P	$0.16	——	($0.16)
Capital Grants: Off-Farm	FTE	1	P	$0.20	——	($0.20)
Lower Farm Assessment & Rebate	FT	1	P	——	——	——
Fuel Distribution Allowance	FT	1	P	$1.07	——	($1.07)
Lower Farm Assessment & Exempt	FT	1	P	——	——	——
Interest Rate Subsidies	FT	1	P	$1.23	——	($1.23)
Crow Benefit Offset	FT	1	P	$2.72	——	($2.72)
Farm Credit Stability Program	FT	1	P	$2.02	——	($2.02)
Special Slaughter Cattle	FT	1	P	——	$0.99	$0.99
PROGRAMS DISCONTINUED IN B.C. AND/OR ALBERTA IN 1990:						
Feed Grain Market Development	FT	1	P	——	$0.32	$0.32
1988 Livestock Drought	FT	3	F/P	$0.91	$0.29	($0.62)
Livestock Protection Act	FT	3	P	——	$0.00	$0.00
Herd Compensation	FT	?	F	$0.00	$0.00	$0.00
Wage Subsidy	FT	1	P	$0.04	——	($0.04)
Grants To Red Meat Associations	FT	?	P	$0.06	——	($0.06)
Interest Rate Rebates	FT	1	P	$0.24	——	($0.24)
TOTALS				$6.20	$6.45	$0.25

Source: Committee of Experts, May 31, 1991

FT = financial transfer, F = Federal, P = Provincial, F/P = Federal/Provincial, FTE = financial transfer equivalent.

—— means not applicable. When across all three columns (Alberta $/ACR, BC $/ACR, BC – Alberta $/ACR) indicates that the program in question was introduced later, i.e. in 1990.

Significant research resources are dedicated to estimating net benefits and a consensus is reached between provinces on important methodological issues before results are published for signatories to the red meat stabilization programs. Interviews revealed significant interprovincial discussion of "polices" and members of each province "informs on" neighboring provinces who may have left something out. Furthermore, difficult coefficients such as feed consumption were improved by outside research. Hence the 1989 and 1990 estimates should, in our judgement, be seen as very accurate for what they were intended.

The Red Meat Agreements covering beef, hogs, and lamb specifies that the Signatories agree to adhere to a "ceiling on governmental benefits" in each province based on its share of national production. Thus the intent of the net benefit estimates is to monitor provincial governments to insure any government intervention by provinces does not push net benefits above agreed caps. The benefit ceiling or cap for B.C. under National Tripartite was 12% of revenues up until 1991 when the rise in cattle moved B.C. to more than 5% of national production. Hence B.C. in 1991 will have a cap of 8% like Alberta, Saskatchewan, Manitoba, and Ontario. Under terms of the National Tripartite Stabilization agreement, any province over its cap must make downward adjustments in provincial supports.

2. *Net Benefit Methodology*

The expert committee approved methodology estimates net benefits by measuring "financial transfers" (FT) made directly to beef producers and "financial transfer equivalents" that reflect programs which directly affect costs for beef producers. In 1991, the financial transfer equivalents were separated into benefits from regulatory programs (RTE) and non-regulatory programs (FTE). These calculated impacts may be either positive or negative. For example the Western Grain Transportation Act (WGTA - often called "Crow rates") increases prairie grain prices thus adding costs for both Alberta cattlemen and B.C. producers that import from Alberta or the B.C. Peace. Hence the feed used by the beef sector has a negative FTE (showing no benefit) which is netted against other positive transfers like Farm Income Insurance.

After attributing each program's benefit (or lack of benefit) among the red meats, the aggregate dollars are divided by the adjusted cash receipts for beef to get the percentage of revenue from government (alternatively considered dollars per $100 of receipts). Adjusted cash receipts (ACR) for beef is a 3-year average equal to value of slaughter cattle and calves, the value of interprovincial exports of feeder cattle and calves, and the value of live cattle and calves exported internationally. The original Statistics Canada farm cash receipts are adjusted to excluded the corresponding values of dairy cows, calves and bulls. The value of interprovincial imports of feeder cattle and calves is subtracted to eliminate duplication. The 1987 to 1989 average of beef cattle ACR for B.C. and Alberta used in the 1990 calculations are as follows:

Adjusted Cash Receipts for Beef Cattle

	Alberta	**B.C.**
1987-1989 average	$1,082,393,000	$158,319,000

Source: Report to Signatories on 1989 Net Benefits to Red Meat Producers, Volume 2, January 1991

3. *Net Benefits Results*

Original net benefit reports order the programs by level of government and level of defence; therefore Tables IV-1 and IV-2 reorganizes the program list for the purpose of better analysis. Table IV-1 lists the net benefits realized in 1990 by B.C. and Alberta beef cattle producers. Programs are ordered from the largest positive benefit to B.C. in 1990 down to the most negative effect on B.C. beef production per dollar of sale. The table continues on to list programs from the least beneficial to Alberta beef (thus most beneficial in helping create a "level playing field" for B.C.) through to most beneficial to Alberta (thus least "level playing field" to B.C.).

In 1990, B.C. derived most net benefit from the FII (NTS Top-up) program. The next "best" program in terms of level of net benefit to producers was NTS, even after the NTS producer fee was subtracted. Including B.C.'s NTS administration fee charged to producers, B.C. derived approximately 12% less benefit from NTS than Alberta because of the larger percentage of finishing in Alberta. Programs other than these two all contribute less than one percentage point of Adjusted Cash Receipts. Contrary to producer ranking of Feed Freight Assistance (FFA) as the number one B.C. program, it stood at only eighth place contributing a mere 0.22% of gross revenue. Farm property tax exemption, range improvement, EEC beef countervail, federal credit programs, and ERDA contributions ranked above FFA.

The Western Grain Transportation Act (WGTA) was over twice as negative to Alberta as to the B.C. beef sector because of the relatively larger finishing sector in Alberta and hence, consumption of grains where prices are elevated by WGTA. At the bottom of the table are the two largest Alberta programs, both unavailable in B.C. -- the Crow Benefit Offset Program and Farm Credit Stability Program. It is important to note that although Alberta had a longer list of programs and program categories in 1990, B.C. still derived 0.2% more benefit than Alberta. That is, the aggregate beef sector playing field is indeed level as shown by this independent, annual federal/provincial evaluation.

This conclusion was also evident in 1989. Table IV-2 takes the same programs listed and ordered in Table IV-1 (described above), and reports the net benefits data for 1989. Those programs that were discontinued in B.C. and/or Alberta in 1990 are listed at the bottom. Those programs not showing any 1989 net benefit for either province that were introduced the next year (1990) are signified by "---" across each of the last three columns (example line #4 -- E.E.C Beef Countervail).

In summary for 1989, B.C. again realized approximately the same amount of benefit as Alberta. Comparing both years, the total levels of net benefits to B.C. and Alberta decreased from 1989 to 1990 by almost the same amount in each province (0.64% to 0.68%). This data confirms the observation made in the introductory section on government, that provincial governments are slowly reducing subsidies in both provinces.

Under Net Benefit methodology, cost increasing programs or programs that are not beneficial to the beef sector are all subsidies to the grain sector and usually reflect some element of transportation (railcars or direct WGTA subsidies). The WGTA unbeneficial programs are relatively large in B.C. at 1.67% in 1989 and 1.44% in 1990 compared to other programs. While this calculation reflects the same per tonne detriment in B.C. as Alberta, the aggregate dollars of B.C. nonbenefit programs are a much smaller proportion of adjusted cash revenue because B.C. feeds so little livestock through to finishing.

Note that the Alberta beef sector was estimated to suffer a 3.67% deficit from WGTA in 1990, down 2.23% from 1989. This large drop reflects the decreasing Crow benefit as crop sizes and finishing consumption increase plus some technical improvement in feed consumption estimates. In both years, Alberta's Crow Benefit Offset (CBO) program translates into a benefit that only offsets about 50% of the nonbenefit caused by the WGTA.

A further review of the Alberta numbers shows the three largest programs fall in the 1.85% to 2.72% range. They include two provincial programs (Farm Credit Stability and CBO) and the tripartite program. The other 32 programs listed either contributed less than 1% of ACR's, or were a deficit to Alberta beef producers.

Yet Alberta help with interest costs sometimes comes in several programs so the consulting team aggregated "credit", "interest rate rebates or subsidies", and the "farm credit stability program", resulting in Alberta support of 3.84% in 1989 and 3.24% in 1990 compared to B.C. with only $.47 in 1989 and a small rise to $.54 in 1990. When viewed in this way, the interest rate help is the largest single area of Alberta assistance to the beef sector. Should B.C. wish to intervene further (to make less level the existing aggregate beef sector playing field), interest subsidies as has been a leading subsidy instrument in Alberta could be used. Yet projected lower interest rates for the 1990's will significantly cut Alberta support and improve B.C.'s competitive position without further provincial programs. This follows because Alberta assistance only helps when longer term rates are over 9% and that will not likely be the case by late 1992.

We now turn to dealing with industry or consulting team problems with the methodology.

4. *Problems with Net Benefit Methodology*

Two significant concerns about net benefit methodology need comment. The first relates to whether all packer assistance is included in Alberta numbers. The second issue involves the difference between costs to government and actual benefits received by producers and hence the appropriate calculation of the Crow grain rate burden.

B.C. cattle producers and packing facility stake-holders share a concern that government aid given to packing plants is properly measured and included in the net benefit calculations. The consultants found B.C. concerns were often shared by Ontario at the expert committee level. The following reflects considerable efforts by the team to explain and reconcile the methodology and figures used in above 1989 and 1990 net benefit calculations with total Alberta grants or loans mentioned in media and other sources.

In general, the allocation procedure is annually described in a "Net Benefit Methods" document put out by the Committee of Experts (for example, see Volume IV NET BENEFIT METHODS, for the 1990 net benefits calculation for red meats and for all commodities issued December 9, 1991). This cost accounting exercise is in many ways similar to the complex costing of railway grain freight rates that is also carried out under the scrutiny of an expert committee.

Benefits to beef cattle producers from assistance to meat packing/processing plants show up in the 1990 net benefit table as lines entitled: ERDA (Economic Regional Development Agreements), the Industry, Science and Technology Canada (ISTC), Western Economic Diversification, loan guarantee program, and capital grants: off-farm.

According to the Agriculture Canada methodology descriptions, all obvious subsidies (where there is sufficient data to estimate benefits) are included in the calculations at a value that reflects the net benefit to producers of various livestock species. Different factors and combinations of factors are used to allocate the aid depending upon the nature of the reported expenditures. For instance, a "share to the producer" factor varies between species and is applied to program expenditure directed at the meat slaughtering/processing sector to reflect the benefits that "trickle down" to the producer level.

The producer share factor for aid to second level processing, 0.614, was derived from the value-added share of live beef cattle in the value of total shipments of meat products at the national level. The expert committee believes this reflects the producer's share in total processing. The producer's share in first-level processing assistance is equal to the live animal value (divided by) the value of first-level processing which includes fresh, chilled and frozen meat, fancy meats (offal etc.) and partially cured meat. It amounts to 0.64 (Volume IV Net Benefit Methods, December 9, 1991).

Any program expenditures that is public information is revealed in the Technical Appendices that accompanies the Report to Signatories on Net Benefits to Red Meat Producers. Any information not considered public is included in the net benefit calculations by the independent Agriculture Canada statisticians, but is rolled into various less obvious categories of a broad nature.

"Capital Grants" are defined as those expenditures whose investment generates a series of benefits over a period longer than one year. Thus a seven year averaging method is used, implying that the "capital grants: off farm" benefit is estimated as one-seventh of the total grants provided over the last seven years. Those meat processing expenditures are then attributed to beef by a factor determined as 0.64 (i.e., 64% of the value added by processing attributable to primary beef production).

The host of capital grants in all provinces are tabulated in Appendix C.1 of the 1990 Net Benefit Methods report, but are not separated to show the allocation to red meats. The consultants therefore use 1989 reports to show the approach. Capital grants to Alberta and B.C. plants are divided into 4 sub-categories:

(1) "Capital grants: off farm" are processing grants included in the net benefit calculations as follows:

Benefactor (Alta.)	Year Received	Benefit	Years Allocated To
A. Anonymous Plant	1986/87	$220,000	1989/1990
	1987/88	$240,000	1989/1990
B. Gainers Inc.	1989/90	$35,000,000	1989/1990
C. XL Foods Limited	1990/91	$656,817	1990

Source: Volume IV Net Benefit Methods, December 9, 1991

The Alberta government has recently repaid $35 million in Gainers Inc. loans to Lloyd's Bank and this amount has been treated as a capital grant. This net benefit does not include loans made to Gainers Properties, a subsidiary company, nor loans from private institutions. Also, it should be noted that the pending court case on the takeover of Gainers by the Alberta government on the grounds that the company was in default may not be decided for several years. Thus, if Gainers was not technically bankrupt at the time it was taken over, or if the company is now repaying its loans, then the loan guarantee would not constitute a net benefit and the calculations may require the necessary adjustments over time.

Under the new program, Grant and Interest Deficiency Guarantee Agreement, the Government of Alberta paid $1.5 million to XL Food Limited. In return, the corporation issued First Preferred shares worth the equivalent amount to the Government of Alberta. This form of government assistance to the corporation confers benefits to beef producers in the province through the government's loss in investment portfolio. The whole amount was attributed to beef cattle.

Recall that only one-seventh of the total grant is accrued per year and 61% or 64%, depending on the nature of the reported expenditure, is attributable to the producer.

(2) "Economic and Regional Development Agreements" (ERDA) expenditures are all treated as capital grants and averaged over seven years since a breakdown of expenditures into capital versus operating grants was not available. The following apply only to B.C.

Benefactor (B.C.)	Year Received	Benefit	Years Allocated To
Beef Producers	1988/89	$42,823	1989. Similarly in

Source: Report to Signatories on 1989 Net Benefits to Red Meat Producers, Volume 2, January 1991.

(3) "Western Diversification Office" (WDO) expenditures used in the 1989 calculations totalled as follows:

Benefactor	Year Received	Total Net Benefit	Years Allocated
Beef Producers	1989/90	$428,099	1989, Similarly in 1990

Source: Report to Signatories on 1989 Net Benefits to Red Meat Producers, Volume 2, January 1991

(4) "Industry, Science and Technology Canada" (ISTC) expenditures used in the 1989 calculations were as follows:

Benefactor (Alta.)	Year Received	Total Net Benefit	Years Allocated
Beef Producers	1986/87	$287,973	$278,438 (to processing plants) ($17,185 (all ISTC)

Source: Report to Signatories on 1989 Net Benefits to Red Meat Producers, Volume 2, January 1991

Credit Programs accrue benefits measured either as the effective interest rate subsidy multiplied by the volume of loans outstanding or, in the case of loan guarantee programs, as the amount of claims paid by governments. Unpublished data on the amounts outstanding, interest paid and interest rates are obtained from a Statistics Canada survey of lending agencies.

The commercial rate represents a weighted average of rates from chartered banks, credit unions, insurance, trust and loan companies. The total benefits accrued are allocated to the various livestock classes by using adjusted cash receipts. These programs apply to the meat processing sector in the following two forms and are attributed to the beef cattle producing sector at the 64% value added share.

(1) "Subsidized Loan" benefits are determined by calculating the difference between the commercial lending rate and the rate charged on the subsidized loans multiplied by the amount of loans outstanding.

(2) "Loan Guarantee" benefits are calculated as the amount paid by the government due to default. There will also be an explicit subsidy if the loan guarantee interest rate is less than the weighted average commercial rate.

Benefactors	Year Received	Subsidized Loans	Guaranteed Loans
Beef Industry	1989	$3,734,619	$745,467

Note: These figures will also include subsidized and guaranteed loans to producers (e.g., through feeder associations)
Source: Report to Signatories on 1989 Net Benefits to Red Meat Producers, Volume 2, January 1991

Table IV-3 shows a 1991 media list of Alberta packer support to the net benefit calculations. Although the consulting team could not fully track the linkage and reconcile exact dollars, the belief is that all the recent aid is recognized except the Cargill grant in 1987. The 1989 and 1990 calculations appear to miss a total of $1.3 million attribution to Alberta net benefits allocated over six future years at $220,000 benefits per year. This apparent oversight amounts to only 0.03% or $0.03 per $100 adjusted cash revenue that should be added to 1989 and 1990 numbers. This should not be viewed as a significant error in such a complex set of calculations.

Turning to the second concern about Net Benefit numbers, economists are uneasy that the above approach treats all expenditures equally and assumes the dollars actually reach producers. Economic theory and common sense suggest some instruments of government are more "efficient" at translating into dollars of benefit than others. For example, transportation subsidies for other than capital items are considered to be very slippery as to who benefits -- the origin supplier, the destination buyer, or the carrier in between.

As Canadians move into a tighter fiscal period for governments, it is increasingly clear dollars should be spent where most efficient or "gain the biggest bang for the buck". It may be for every dollar spent on program "X" only 70% reaches the farmer, while on program "Y" 85% reaches the farmer. Program "Y" is more efficient. Does a dollar on "bottom loaded" programs such as Crow Benefit Offset help cattle feeders more than a dollar spent on "top loaded" programs like Farm Income Insurance (FII)? Hence, if the entire net benefit approach is to continue, the mere accounting exercise now used needs to conduct an analysis to evaluate many of the entries in order to allocate to producers that amount which really benefits them. This is needed for government to know where to cut inefficient programs when perhaps expanding efficient programs.

Table IV – 3: Alberta Government's Financial Involvement, & Net Benefit Calculations in the Meat Packing Industry During 1987–91

Date	Company Receiving Support	Type Support	Amount #	Date Of Agreement	Total Expenditures	Unexplained Expenditures	Notes
1987	CC	Grant	$4,000,000	86/87	$220,000	$3,780,000	(Appears as if producer share is 0.61 x 0.64 (beef share) / 7 (yrs.). Treated differently than following which are shown as totals.)
1988	CP	Grant	$270,000	87/88	$240,000	$30,000	
1987	XL	IRG	(up to) $7,500,000	1989	$3,734,619	Acceptable^	(Benefit accrued from '88 to '91 while interest rates were higher than in '87.)
1989	XL	LG	$2,500,000	1990	$1,500,000	Acceptable•	
1989	XL	ELG	$3,000,000				
N/A	GI	LG		89/90	$35,000,000	Acceptable	
N/A	CF	Loan	$15,000,000			Acceptable	(This may already be incorporated into 1990 figures.) •
1991	LF	Loan	$10,000,000				(A portion may show up in 1991 net benefits.) •
1991	LF	Grant	(up to) $6,000,000				(A portion may show up in 1991 net benefits.) •

Legend:

CC = Cargill Canada
CP = Canada Packers, Calgary
XL = XL Foods Ltd.
CF = Centennial Food Corp.
LF = Lakeside Farm Industries Ltd.
GI = Gainers Inc
IRG = Interest Rate Guarantee
LG = Loan Guarantee
ELG = Export Loan Guarantee

Sources:

Red Deer Advocate, September 25, 1991
Report to Signatories on 1989 Net Benefits to Red Meat Producers, Volume 2, January 1991.
1990 Red Meats Net Benefits, Volume II, December 9, 1991
Net Benefit Methods, Volume IV, December 9, 1991

Information from Red Deer Advocate, September 25, 1991.

^ Acceptable implies that after the total expenditures are accrued over time and multiplied by the appropriate factor, the amount listed in total expenditures is accounted for as presented in the articles.

• Depends whether an interest advantage exists and/or the loan is defaulted.

A second more significant net benefit example than FII involves an area where much research gives an indication of the inefficiency of government transfers. The issue is whether the federal transfer equivalent dollars (FTE) spent on Crow grain export rail subsidies (WGTA) always translate into a full "detriment" in terms of higher barley prices. This significant shortage in 1990 was estimated at ($1.44 /$100 ACR) to B.C. and ($3.67 /$100 ACR) to Alberta beef producers.

Net benefit methodology consistently assumes all expenditures on all programs translate into equivalent producer benefits or deficiencies. Yet considerable research experience by KenAgra and recent research by Kurt Klein, et. al. ("Regional Implications of Compensatory Freight Rates for Prairie Grains and Oilseeds") suggest the WGTA (FTE) is overestimated by as much as 25%. Klein approaches from the perspective of industry estimates of inefficiencies that will be reduced or eliminated when and if the rail rate moves to visible, compensatory rate. KenAgra adds that during times of glutted grain supplies, feed prices for Alberta and B.C. are not fully impacted by the subsidy. Alberta setting the Crow Benefit Offset program at $10 when the WGTA federal subsidy "detriment" is closer to $16 is an indication Alberta understands this issue.

While the net benefit methods should all change to program measures after inefficiencies, the consultant team is particularly concerned that the WGTA deficiency is over-estimated and provides the following amendments for methodology.

	Alberta	B.C.	B.C. vs Alberta
1990 sum of net benefits (expert report)	$5.57	$5.75	$0.18
Addition of grants missed from Alberta	.03		
Revised net benefit total within existing	$5.60	$5.75	$0.15
Removal of 25% of WGTA deficiency	.92	.36	
Revised 1990 Net Benefit Estimate if WGTA methodology changes	$6.52	$6.11	($0.41)

5. *Conclusion*

After exploring various concerns about the Net Benefit methodology, the playing field due to government is essentially level. Under current net benefit methodology, the consulting team found that B.C. still has $.15/$100 ACR more government help than Alberta even after an apparent Alberta grant omission is corrected. On an $863 finished animal, this amounts to about $1.29 per head more government help in B.C. than in Alberta. Should the methodology change as suggested to reflect program inefficiency on all programs, the WGTA component alone would alter the playing field in favour of Alberta by $0.41/$100 ACR. That is, Alberta would receive $3.53 per head more than B.C. beef producers. The complete effect of such a methodology change can only be seen after much additional research on all programs.

D. Noteworthy Alberta Programs

1. *Alberta Programs*

Several Alberta programs are explained here more than in the net benefits section because the programs provide ideas where B.C. could redirect support or perhaps increase its support to the beef sector.

Further to the trends identified in the background section, the Alberta government has been in a phasing out mode with many programs in order to meet government fiscal priorities, GATT restraints, and broad national agreement to fund and utilize NISA rather than other programs. One market cause of this drop in provincial support was the lowering of short and long term interest rates -- the value of interest rate subsidies in 1992 will be much lower as interest rates drop.

However, as October, 1991 grain farm lobbying caused Alberta to re-instate the two following programs -- farm fuel and crow benefit offset -- for about 18 months pending the calming of Canada's grain farmers', and progress on the Crow and GATT issues. However, the October, 1991 outbursts of grain farm lobbying swept the country so Alberta re-instated several programs for about 18 months pending the calming of Canada's grain farmers' situation and progress on the Crow and GATT issues.

a) ***Farm Fuel Distribution Allowance (FFDA)***

In early 1990, the Alberta Government announced the phased reduction of farm fuel and fertilizer support programs. In the November 14, 1991 announcement of emergency aid, only the fuel support was re-instated. The 1974 introduction of 10 cents per litre support to diesel and 4 cents support to gas under the FFDA was to have decreased to 8 cents in November 1991 for diesel and 2 cents for gas. However, both were reinstated to the 1974 level for about another eighteen months.

Fuel subsidies do not discriminate between commodities and hence are more "green" under GATT rules than for example FII. Beef producers consume less fuel than grain producers and probably less than vegetable producers per dollar of gross sales, but do require fuels for transportation generally, and for equipment in the expensive harvesting of forages. It follows that if FII were required to be reduced and government was willing to add to fuel programs, beef producers will want to know potential gains and losses. A close review of the net benefit study will give one estimate of this detail.

b) *Crow Benefit Offset (CBO)*

Alberta has paid the CBO since September 1, 1985 in an attempt to curb the distortive effects of the Western Grain Transportation Act (WGTA). At that time, what was called the Alberta Feed Grain Market Adjustment Program paid $21.00 per tonne of farm-fed or purchased feed-grain through a rebate system applied for by livestock producers. In 1987, the payment changed to $13.00 per tonne under the Alberta Crow Benefit Offset Program and decreased in 1989 to its present level of $10.00 per tonne.

The Alberta Government has committed to extending the CBO program to March 31, 1993 which will add $55 million in offset payments to the $311 million since the programs inception. However, the Alberta Government remains adamant that the method of paying the CBO be changed (Government of Alberta news release, November 14, 1991). In addition, part of the Growing Together objectives for 1991 and 1992 are to continue addressing the western grain transportation issue in order to assess the diversification potential of a change in the method of payment.

Saskatchewan introduced a CBO program for the period of 1989 to 1990; however due to fiscal constraint, it had to be eliminated. B.C. responded to the CBO with a Feed Grain Market Development program and then the Beef Slaughter program. Both lasted only through 1989 and were eliminated due to a range of reasons. B.C. specifically uses FII to offset Alberta's CBO in some ways (see FII objectives discussed later in this report).

Should FII be changed or B.C. desire to assist backgrounding or finishing more, creating its own CBO is an alternative but fiscally very expensive. As found in the net benefits section, the government playing field is relatively level between B.C. and

Alberta. Later it is revealed that B.C. has more than an equal subsidy level for backgrounding and finishing sectors, so further discussion of CBO seems inappropriate.

E. Programs of Importance to B.C.

Several programs are offered by B.C. in support of cattle producers in the province. Some of the most important and their implications to industry are discussed in this section.

1. National Tripartite Stabilization (NTS) Program for Red Meats

a) *Introduction*

Canadian producers commonly rely entirely on NTS for risk management. In fact for most producers, this is their only form of risk management. This may hinder the development and use of other risk management tools that are more common in NTS-type program deficit areas such as the PNW -- such as the use of futures markets and forward delivery contracts. Presently, the development of other risk management tools is either premature or very scant. Simulated historical (1976-86) net income averages indicate that participation in NTS-linked marketing strategies generally produces higher net incomes than the private risk management plans of hedging. This reflects, in part, the subsidy aspect of the NTS program since two-thirds of the premium costs are paid by government (Freeze, Nelson, Musser and Hironaka, 1990). A synopsis of the NTS programs is presented in Table IV-4.

Table IV – 4: NTS Description

Topic	Cow–Calf Plan	Feeder Plan	Slaughter Plan
Introduction in Alberta	April 1989	July 1987	July 1986
Participation in Alberta (1990)	579,951 head; 7750 producers 32% of cows	195,177 head; 2633 producers	1,210,491 head; 3609 producers
Introduction in BC	April 1989	January 1989	January 1989
Participation in BC (1990)	131,499 head; 1375 producers 46% of cows, 75% of producers	46,187 head; 543 producers	55,658 head; 873 producers
Intended purpose	to shield enrolled producers from sudden changes in fall calf values; protects the value of production	to provide producers with a reasonable degree of protection against losses caused by increasing production costs or falling market prices/returns without encouraging overproduction	to provide producers with a reasonable degree of protection against losses caused by increasing production costs or falling market prices/returns without encouraging overproduction
Nature of the payment	after the fact	after the fact	after the fact
Administration in Alberta	done by Alberta Agriculture free of charge to producers	done by Alberta Agriculture free of charge to producers	done by Alberta Agriculture free of charge to producers
Administration in BC	done by BCCA on a cost recovery basis	done by BCCA on a cost recovery basis	done by BCCA on a cost recovery basis
Formula	Indexed Moving Average Price (IMAP) based…	Gross Margin (GM) based…	Gross Margin (GM) based…
	Payment per cow = national support price* – national average selling price X 472.5 (ie. assumed pounds weaned per cow) / 100	Payout (if positive) = national average selling price – national support price* X average slaughter cattle weight sold that month (approx. 1,150 lbs.)	Payout (if positive) = national average selling price – national support price* X average slaughter cattle weight sold that month (approx. 1,150 lbs.)
	*National support price = 85% X indexed moving average price** (IMAP)	*National support Price = cash cost for month + 85% of 5–year average margin**	*National support Price = cash cost for month + 85% of 5–year average margin**
	Indexed average price = previous 10–year average of deflated price* X (deflator**** / 100)	**5–year Average Margin = five–year national average selling price – five–year national average costs for month	**5–year Average Margin = five–year national average selling price – five–year national average costs for month

Table IV – 4: NTS Description

Topic	Cow-Calf Plan	Feeder Plan	Slaughter Plan
	Deflated price = national average selling price / (deflator* / 100) ****Deflator = gross domestic product implicit price index		
Calculation assumptions	Weaning rate is 90% (used in calculating the assumed lbs. weaned per cow) Prices for 500–600 lb. steer calves and 400–600 lb. heifer calves sold in September, October, November and December at Edmonton stockyards are weighted by BC and Alberta beef cow numbers from January Statistics Canada inventory report (used in the National Average Selling Price)	To calculate selling price: The National Average Selling Price of feeder cattle is a weighted average price of heifers weighing 700–800 lbs. and steers of 800–900 lbs. sold at Edmonton for Alberta and BC. To calculate costs: Calf prices are determined from average selling prices of 500–600 lb. steer calves and 400–600 lb. heifer calves at Edmonton (representing Alberta and BC). The months in which the calves are purchased for a particular sales month, three rates of gain are used: 1, 1.75, and 2.5 lbs. per day for heifers, and 1, 2 and 2.75 lbs. per day for steers. Thus "days of possession" range from 4 to 11 months. The cost of the mix of calves is the average from the markets across Canada during those periods, weighted by the percentage sales of backgrounded heifers and steers from each area. Feed costs are calculated as 75% of the cost per pound of gain for heifer and steer calves taken to 800 lbs. and 900 lbs. respectively in the slaughter cattle option.	To calculate selling price: For Alberta and BC, Alberta prices collected by Agriculture Canada are used. Weekly A1, A2 rail grade prices are converted to live weight equivalent prices assuming that steers dress out at 58.5% and heifers at 57%. These are then converted to a monthly average. Alberta and BC provincially inspected slaughter volumes weight (slaughter + exports – imports) weight the Alberta prices to be used in the national average selling price. Shrunk weight is used on final wt. To calculate costs: For replacement cattle, in the west, for Alberta/BC short-keep prices are the average of 800–900 lb. steers and 700–800 lb. heifers sold at Edmonton. Calf prices are determined from average selling prices of 500–600 lb. steer calves and 400–600 lb. heifer calves at Edmonton. Prices are weighted by regional, federal and provincial inspected slaughter volumes. An estimated proportion of replacements (yearlings and calves) based on the month of sale is used.

Table IV – 4: NTS Description

Topic	Cow-Calf Plan	Feeder Plan	Slaughter Plan
		Interest costs are calculated on the purchase cost of replacement cattle only using the monthly average of the chartered bank prime rate plus 1% and based on the length of possession as discussed above.	Type of animal is large frame/ compensating medium frame. For feed costs, in the west, formulation done by Alberta Agriculture and barley, silage and supplement are Alberta values and average analysis of Alberta feeds done by Alberta Agriculture. Alberta feed efficiencies are assumed. Interest costs are calculated on the purchase cost of replacement cattle only using the monthly average of the chartered bank prime rate plus 1%. The time used is the preceding 8 and 7 months for steer and heifer calves respectively and 4 and 3 months for short keep steers and heifers respectively in the West.
Conditions of payment	Do not have to have sold calves, but based on the number of cows and bred heifers owned and registered April 1st of each year	All steers and heifers registered in this option are eligible no matter of weight at time of sale. Cows are not eligible and bulls are ineligible unless sold under 1050 lbs. and if over must have a proof of A or B grade, or price equivalent. Cattle must be owned or weaned 60 days prior to sale to be eligible.	All heifers or steers sold dressed grading A or B, or sold live at a weight of 900lbs. and over for heifers and 1050 lbs. and over for steers and at a price equivalent to these grades are considered eligible. Sales at less than these minimum weights require proof of slaughter to be considered eligible. Bulls and cows not eligible unless proof of slaughter and grade are supplied. Cattle must be owned or weaned 60 days prior to sale to be eligible.
Timing of calculation	Yearly (January)	Monthly	Monthly

Table IV – 4: NTS Description

Topic	Cow-Calf Plan	Feeder Plan	Slaughter Plan
Timing of payout	Yearly (Before April)	Quarterly (Producers can expect to receive checks approximately 72 days after the end of a quarter.) Changed from monthly to quarterly January of 1989.	Quarterly (Producers can expect to receive checks approximately 72 days after the end of a quarter.) Changed from monthly to quarterly January of 1989.
Registration and premium payment	ALL beef cows and bred heifers owned April 1 are registered and premiums paid by April 15. Applications for enrollment received after April 1 will become effective the following April 1.	ALL cattle except cows and bulls for breeding herd that are purchased or weaned during each quarter are to be registered and premiums payed on these animals by the 15th of the month folowing the end of the quarter. Premium credits are available for cattle that die, are transferred to the breeding herd, are sold within 60 days of purchase or weaning, or do not grade A or B when sold railgrade. Culled heifers are to be registered even if sold within the same quarter. Detailed reports explaining sales, deaths, weanings, purchases, and and breeding herd transfers must be submitted quarterly.	ALL cattle except cows and bulls for breeding herd that are purchased or weaned during each quarter are to be registered and premiums payed on these animals by the 15th of the month folowing the end of the quarter. Premium credits are available for cattle that die, are transferred to the breeding herd, are sold within 60 days of purchase or weaning, or do not grade A or B or the price equivalent. Culled heifers are to be registered even if sold within the same quarter. Detailed reports explaining sales, deaths, weanings, purchases, and and breeding herd transfers must be submitted quarterly.
Producer Administration Fee (BC only)	$.20/head due by April 15 each year	$.30/head taken off the payments	$.30/head taken off the payments
Enrollment/Late Entry	If own 6 or more cows/bred heifers April 1 the year prior to enroll- ment, of the potential payouts, receive 25% the 1st year, 50% the 2nd year and 75% in the third year all the while paying full premiums (when payments triggered). Following years pay 100% of any payouts triggered.	If sell 11 or more eligible animals in 12 months prior to enrollment, of the potential payouts, receive 25% the 1st quarter, 50% the 2nd and 3rd quarters and 75% the 4th quarter, and then full benefit whenever payments are triggered. Full payment of producer premiums are required from the time of enrollment.	If sell 11 or more eligible animals in 12 months prior to enrollment, of the potential payouts, receive 25% the 1st quarter, 50% the 2nd and 3rd quarters and 75% the 4th quarter, and then full benefit whenever payments are triggered. Full payment of producer premiums are required from the time of enrollment.

Table IV – 4: NTS Description

Topic	Cow–Calf Plan	Feeder Plan	Slaughter Plan
	If own less than 6 cows/bred heifers, entitled to full benefits in the first year.	If sell less than 11 animals, entitled to full benefits in 1st quarter.	If sell less than 11 animals, entitled to full benefits in 1st quarter.

Continued development in the PNW and Alberta of forward cash contracts with packers for finishing lots and contracts with finishing lots for backgrounders is virtually non-existent in B.C. -- the provincial culture from years of FII has left a total reliance on government risk management aids.

b) *NTS Participation*

Between B.C. and Alberta, there are important differences in participation by producers in each of the three levels of NTS. These differences provide an indication of orientation toward risk and indirectly an indication of scale of operation; and, hence whether one province may have different economies to scale from the other.

The consultants evaluated the proportion of total cattle herd in NTS. They found the data inconsistent between Statistics Canada and BCMAFF survey of feeders and finishers for January 1 inventory so a comparison for cows only was made (see Table IV-5). It showed 35% of Alberta cow inventory was in NTS while 52% of the B.C. inventory was in NTS. Data from sourced from BCCA records indicate that as of February 1, 1992, 121,000 cows or 52% of the cow population was in the NTS program.

Table IV-5 also shows the number of cows and operators in both B.C. and Alberta by size group. To make inferences about competitiveness that follow, the assumption is made that the proportion of producers and animals registered in the various plans are representative among the size groups of the total provincial industry.

With respect to cow-calf ranches, B.C. has twice the number of "commercial" large-scale operations as Alberta. In B.C. these large ranches, classified as having greater than 300 cows, have 20% of the cows, whereas the 2% of Alberta ranches in this category have only 13% of the cows. Almost three quarters of Alberta's cow-calf operations, making up 45% of the Alberta cow herd, have less than 100 cows compared to only 59% of the operations in B.C., making up only 25% of the cow herd.

Tables IV-6 and IV-7 show feeder and slaughter cattle participation by size of sales group. It reveals that Alberta and B.C. background operations tend to be of comparable size. In B.C. and Alberta, very small operations (under 100 animals) are the most prevalent with Alberta and B.C. having 46% and 55% respectively of these types of operations. All groups larger than 100 animals account for less than 20% of the farms, but produce 75% of the feeders in B.C. and Alberta. These observations may be skewed somewhat for Alberta, since the feeder plan of NTS is not well subscribed in Alberta. However, the consultants experience in the industry suggests the Alberta NTS size breakdown for backgrounding is nearly correct. In conclusion, the size of backgrounding operations in B.C. and Alberta are about equal.

Table IV – 5: Alberta and British Columbia NTS Cow–Calf Plan 1990 Participation By Size Group

	Alberta				British Columbia				B.C. as a % of Alberta	
Category	Breeding Female #	Breeding Female %	Producers #	Producers %	Breeding Female #	Breeding Female %	Producers #	Producers %	Breeding Females	Producers
1990										
Cow Inventory *	1,650,000	---			265,000	---				
Total in NTS	579,951	35.1%	7,750		131,499	49.6%	1,375		22.7%	17.7%
Size Groups:										
0 **	0	0.0%	302	3.9%	0	0.0%	137	10.0%		45.4%
1-99	260,382	44.9%	5,622	72.5%	33,028	25.1%	808	58.8%	12.7%	14.4%
100-299	243,581	42.0%	1,668	21.5%	58,872	44.8%	373	27.1%	24.2%	22.4%
300-999	65,285	11.3%	150	1.9%	24,513	18.6%	50	3.6%	37.5%	33.3%
1000+	10,703	1.8%	8	0.1%	15,086	11.5%	7	0.5%	141.0%	87.5%
1989										
Cow Inventory***	1,753,000	---			276,000	---				
Total in NTS	581,441	33.2%	7,899		131,499	47.6%	1,375		22.6%	17.4%
Size Groups:										
0	0	0.0%	274	3.5%	0	0.0%	20	1.5%		7.3%
1-99	265,223	45.6%	5,851	74.1%	38,291	29.1%	929	67.6%	14.4%	15.9%
100-299	235,797	40.6%	1,614	20.4%	57,496	43.7%	362	26.3%	24.4%	22.4%
300-999	65,824	11.3%	151	1.9%	26,657	20.3%	54	3.9%	40.5%	35.8%
1000+	14,596	2.5%	9	0.1%	10,980	8.3%	4	0.3%	75.2%	44.4%

* Statistics Canada, January 1, 1990 inventory of breeding females. In all cases includes cows and heifers 1 year and older.

** 0 group are those that are enrolled but did not claim payments (e.g. did not have inventory).

*** Statistics Canada, July 1, 1989 inventory of breeding females. In all cases includes cows and heifers 1 year and older.

--- not applicable

Notes: Breeding Females – in all cases includes cows and heifers over 1 year of age. NTS numbers a proxy for inventroy within size groups.

Source: Statistics Canada, 1991

Table IV – 6: Alberta and British Columbia NTS Feeder Cattle Plan 1990 Participation By Size Group

Category	Alberta Feeder Cattle #	Alberta Feeder Cattle %	Alberta Producers #	Alberta Producers %	British Columbia Feeder Cattle #	British Columbia Feeder Cattle %	British Columbia Producers #	British Columbia Producers %	BC as a % of Alberta Feeder Cattle	BC as a % of Alberta Producers
1990										
Total in NTS	195,177	—	2 633	---	55,658	—	873	---	28.5%	33.2%
Sales Groups:										
0 *	0	0.0%	962	36.5%	0	0.0%	262	30.0%		27.2%
1-99	41,308	21.2%	1,206	45.8%	13,970	25.1%	476	54.5%	33.8%	39.5%
100-299	57,742	29.6%	354	13.4%	14,278	25.7%	90	10.3%	24.7%	25.4%
300-999	43,209	22.1%	91	3.5%	19,001	34.1%	41	4.7%	44.0%	45.1%
1000+	52,917	27.1%	20	0.8%	8,407	15.1%	4	0.5%	15.9%	20.0%
1989										
Inventory**										
Total in NTS	199,872	---	2,633	---	55,658	---	873	---	27.8%	33.2%
Sales Groups:										
0	0	0.0%	985	37.4%	0	0.0%	193	22.1%		19.6%
1-99	45,836	22.9%	1,312	49.8%	17,999	32.3%	603	69.1%	39.3%	46.0%
100-299	66,754	33.4%	400	15.2%	16,078	28.9%	95	10.9%	24.1%	23.8%
300-999	48,167	24.1%	100	3.8%	17,187	30.9%	34	3.9%	35.7%	34.0%
1000-2499	17,369	8.7%	13	0.5%	1,185	2.1%	1	0.1%	6.8%	7.7%
2500-4999	10,583	5.3%	3	0.1%	2,877	5.2%	1	0.1%	27.2%	33.3%
5000-9999	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0.0%	0.0%
10000+	11,162	5.6%	1	0.0%	0	0.0%	0	0.0%	0.0%	0.0%

* 0 group are those that are enrolled but did not claim payments (e.g. did not market any cattle)

** of feeder cattle; July 1, 1989

--- not applicable

Notes: NTS numbers a proxy for inventory numbers within sales groups

Sources: Agriculture Canada, 1991; Statistics Canada, 1991

Table IV – 7: Alberta and British Columbia NTS Slaughter Cattle Plan 1990 Participation By Size Group

	Alberta				British Columbia				BC as a % of Alberta	
Category	Slaughter Cattle #	Slaughter Cattle %	Producers #	Producers %	Slaughter Cattle #	Slaughter Cattle %	Producers #	Producers %	Slaughter Cattle	Producers
1990										
Total in NTS	1,210,491	—	3,609	—	46,187	—	873	—	3.8%	24.2%
Sales Groups:										
0 *	0	0.0%	1,039	28.8%	0	0.0%	214	24.5%		20.6%
1-99	50,835	4.2%	1,418	39.3%	4,638	10.0%	275	31.5%	9.1%	19.4%
100-299	97,959	8.1%	572	15.8%	5,989	13.0%	35	4.0%	6.1%	6.1%
300-999	195,775	16.2%	367	10.2%	6,783	14.7%	13	1.5%	3.5%	3.5%
1000+	865,918	71.5%	213	5.9%	28,777	62.3%	6	0.7%	3.3%	2.8%
1989										
Total in NTS**	1,180,145	—	3,823	—	56,878	—	577	—	4.8%	15.1%
Sales Groups:										
0	0	0.0%	947	24.8%	0	0.0%	175	30.3%		18.5%
1-99	59,489	5.0%	1,588	41.5%	6,323	11.1%	329	57.0%	10.6%	20.7%
100-299	118,421	10.0%	686	17.9%	8,434	14.8%	47	8.1%	7.1%	6.9%
300-999	213,361	18.1%	387	10.1%	9,542	16.8%	20	3.5%	4.5%	5.2%
1000-2499	183,100	15.5%	118	3.1%	1,740	3.1%	1	0.2%	1.0%	0.8%
2500-4999	176,325	14.9%	50	1.3%	12,918	22.7%	3	0.5%	7.3%	6.0%
5000-9999	266,417	22.6%	38	1.0%	6,955	12.2%	1	0.2%	2.6%	2.6%
10000+	163,030	13.8%	9	0.2%	10,966	19.3%	1	0.2%	6.7%	11.1%

* 0 group are those that are enrolled but did not claim payments (e.g. did not market any cattle).

** of slaughter cattle; July 1, 1989

--- not applicable

Notes: NTS numbers a proxy for inventory numbers within sales groups

Source: Statistics Canada, 1991

The finishing sector differs between Alberta and B.C. in terms of the ratio of "commercial" feedlots (over 1,000 head). Six percent of Alberta feedlots handled more than 1,000 head and accounted for 72% of Alberta's finished animals. In B.C., 0.7% (six participating feedlots) handled greater than 1,000 head; these lots finished 62% of B.C.'s slaughter cattle.

No B.C. feedlots fed and sold over 10,000 head. Twelve Alberta producers with feedlots having capacity over 5,000 head fed and sold more than 10,000 head. These operators account for 45% of the animals in Alberta's slaughter program. In fact, one Southern Alberta feedlot handles approximately 75,000 head -- more than the entire B.C. finishing sector. Assuming NTS data is representative of the whole finishing sector, it follows that few B.C. feedlots are able to capture the same economies to scale in finishing lots as captured by Alberta finishers.

c) *NTS Payouts*

Table IV-8 shows the payouts since 1986. The slaughter plan tends to payout larger amounts on a much more frequent basis than the feeder plan. The cow-calf plan has not yet triggered a payout.

Table IV – 8: NTS Payouts Per Head ($/Head)

DATE	SLAUGHTER PLAN	FEEDER PLAN	COW-CALF PLAN
Q1 1986	$0.00	$0.00	$0.00
Q2 1986	$13.20	$0.00	
Q3 1986	$0.00	$0.00	
Q4 1986	$0.00	$0.00	
Q1 1987	$0.00	$0.00	$0.00
Q2 1987	$0.00	$0.00	
Q3 1987	$0.00	$0.00	
Q4 1987	$17.37	$0.00	
Q1 1988	$37.91	$0.00	$0.00
Q2 1988	$42.25	$0.00	
Q3 1988	$100.95	$32.79	
Q4 1988	$87.92	$38.56	
Jan 1989	$17.09	$0.00	$0.00
Feb 1989	$3.02	$0.00	
Mar 1989	$0.00	$3.96	
Apr 1989	$44.50	$16.62	
May 1989	$59.83	$23.68	
Jun 1989	$68.58	$9.32	
Jul 1989	$49.30	$0.00	
Aug 1989	$10.28	$0.00	
Sep 1989	$17.35	$1.65	
Oct 1989	$12.93	$0.00	
Nov 1989	$29.21	$0.00	
Dec 1989	$5.18	$0.00	
Jan 1990	$0.00	$0.00	$0.00
Feb 1990	$0.00	$0.00	
Mar 1990	$11.96	$11.45	
Apr 1990	$0.00	$0.00	
May 1990	$10.23	$0.00	
Jun 1990	$0.00	$0.00	
Jul 1990	$0.00	$0.00	
Aug 1990	$0.00	$0.00	
Sep 1990	$0.00	$0.00	
Oct 1990	$0.00	$0.00	
Nov 1990	$0.00	$0.00	
Dec 1990	$0.00	$0.00	
Jan 1991	$0.00	$0.00	
Feb 1991	$0.00	$0.00	
Mar 1991	$0.00	$0.00	
Apr 1991	$0.00	$0.00	
May 1991	$0.00	$0.00	
Jun 1991	$0.00	$0.00	
Jul 1991	$33.68	$0.00	
Aug 1991	$98.09	$0.00	
Sep 1991	$131.06	$0.00	

Source: Agriculture Canada/Alberta Agriculture

i) *Effects of NTS on the Industry*

- **Implications**

The two provinces --B.C. and Alberta-- have quite different attitudes towards NTS -- B.C. entered late, with some confusion as to the predictability of NTS and its relation to FII (top-up). Perhaps B.C. leaders tended to view the NTS trio of programs from a cow-calf rather than finishing perspective, which is more common in Alberta. Many B.C. cattlemen are disappointed the NTS cow-calf program does not pay out regularly like FII. Still a large percentage of B.C. producers have joined the cow-calf NTS (52% according to BCCA).

In Alberta, there is considerably more faith in the "trickle down" theory (discussed next), so more Alberta cow-calf operators stayed out of NTS and saved the premium cost during 1989-1991. It is subtle but very important to realize the cow-calf NTS program is quite different from the other two as it relies on an indexed moving average price (rather than margin) and pays only annually (rather than monthly). The cow-calf program is therefore more predictable and perhaps trustworthy -- one does not have to understand "trickle down" and rely on far-off finishers for risk management.

For some reason, fewer B.C. cow-calf operators believe "trickle down" from B.C. or Alberta slaughter program payments translates into firmer and adequate B.C. calf prices. Two outcomes seem to be unfolding in B.C. which were costly in the short run but perhaps leave B.C. better able to weather any cattle cycle price weaknesses in the next few years. First, the Farm Income Insurance (FII) experiences perhaps caused B.C. to invest in extra and perhaps wasted cow-calf NTS premiums, rather than rely on trickle down. Secondly, B.C. should be better able to weather any price reductions later in the cattle cycle in the 1993-95 period because it has more of its cows enrolled in NTS than Alberta and almost all the cows in FII (top up).

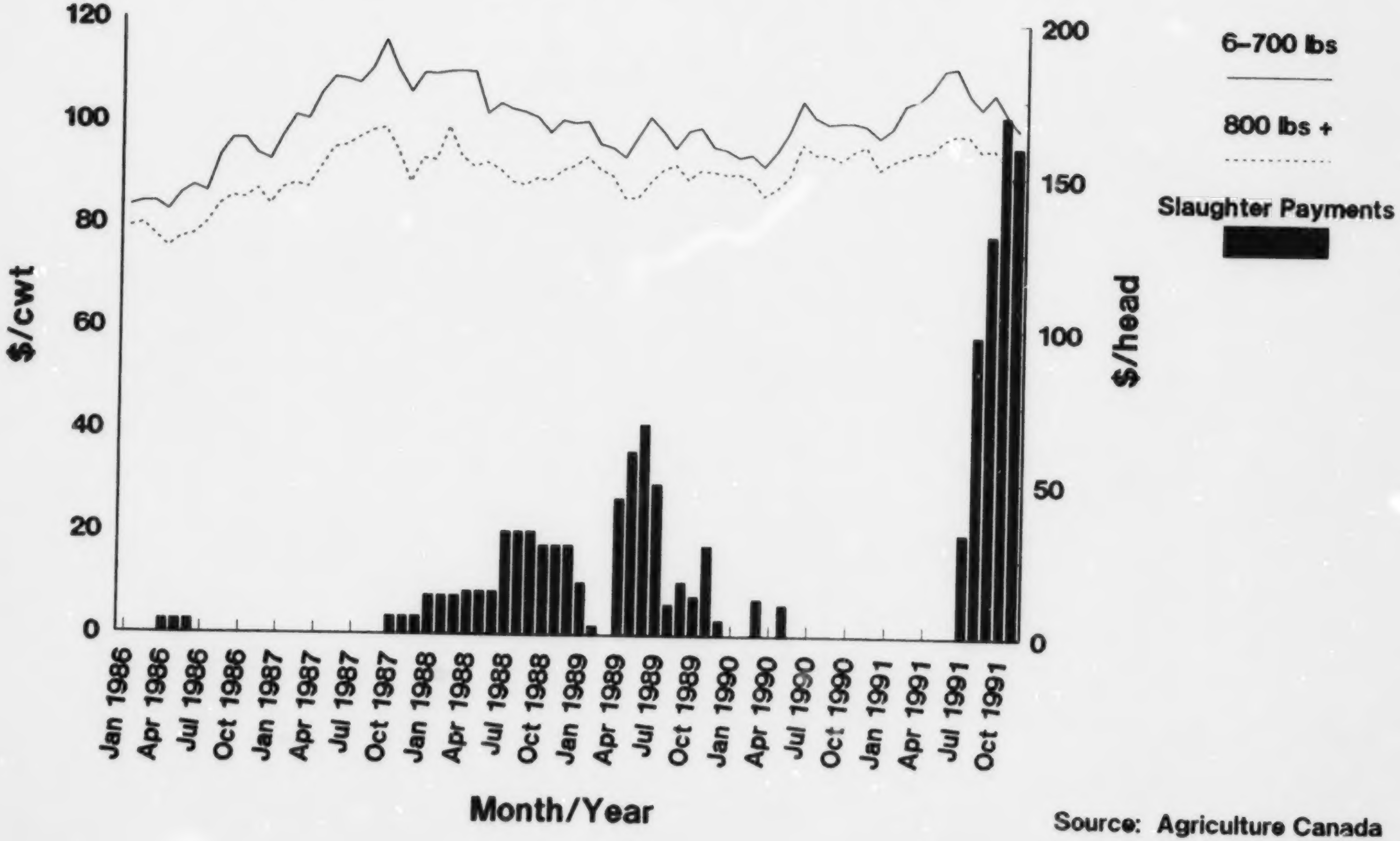
Analysis of "trickle down" effects of NTS slaughter and backgrounder programs have many industry participants believing that it effects producer behaviour. Commonly, but not in all cases, it seems that the NTS program payments and anticipation of payments tend to change or modify producers decision making and fed cattle (feeder and slaughter) marketing patterns. The study team interviews suggest Alberta finishers seem more aware of "trickle down" belief than B.C. feedlot operators.

NTS slaughter payments (and to a lesser extent feeder payments) or anticipation of payments should enable finishers to bid more aggressively for feeder cattle, because it provides a safety net for the producer. What is unclear is when this price effect will show itself. Theoretically the anticipation of, or actual receipt of payments adjusts the prices of feeder calves and cattle upwards by some proportion of the payment, giving rise to the so called "trickle down" effect to the cow-calf producer and backgrounder. Alberta government officials say that although there is little to prove or disprove the theory, producers consider an estimated payment plus the market return for the fed animal before purchasing replacement feeders. Thus, if a payout is expected on the sale of an animal, this theoretically establishes a floor price that the producer can and is willing to pay for the feeder animal some 120 to 180 days before the actual payment. Some industry watchers believe it causes prices to be somewhat higher than might be otherwise.

Past NTS payouts may also dictate to some extent the buyers financial ability to be at all bidding for cattle. NTS therefore acts to increase the competition for feeder cattle, regardless whether bought in Alberta or B.C. Also, producers indicated that the timing and type of replacement feeder purchased may also be affected by NTS payments. For instance, a high probability of payouts in forthcoming months may cause producers to purchase heavier animals that will be finished within the time period. Since payout eligibility for feeder and slaughter cattle depend on the sale of the animal, cattle may be sold by feedlots in those months in which payouts are anticipated. This could distort actual prices and in fact make prices more volatile rather than more stable. For example, if most Canadian cattle producers anticipate a payment in June and holds cattle beyond normal May delivery dates to receive the payment, the May prices might rally while June prices drop even more than normal market conditions would warrant. The tendency for this to occur was much more likely when payments were calculated quarterly, but with payments being calculated monthly this abnormality in the market is lessened, if it ever existed at all.

The study team took these observations seriously and attempted to identify whether NTS payouts for slaughter cattle had any direct influence on the price paid by producers for feeders. Prices for two weight classes of feeder cattle (600-700 lbs. (272-318 kg) and 800 lbs. (363 kg)) were compared against slaughter cattle NTS payments and the result is set out in Figure IV-1. Price information is presented in Appendix C1. Quite frankly, if there is a relationship it is hard to determine from the graph.

Figure IV – 1
Average Monthly Feeder Prices and NTS Slaughter Payments



Source: Agriculture Canada

Therefore, examination of the determinants of feeder price was carried out and when the U.S. price for feeder cattle was regressed against the Canadian feeder cattle price it was found to explain 98% of the price variance (see Figure IV-2). What this means is that if NTS payouts for slaughter cattle influence the price for feeders it is minimal. This is particularly true when the U.S. price is strong and rising as it was in recent years (see Figure IV-2).

In addition to the influence of the strong U.S. price for feeders, the excess Canadian slaughter capacity, particularly in Alberta caused slaughterers to bid strongly for finished cattle and in turn feedlot operators to bid strongly for calves. Also, with the strong market for feeders in the U.S., many feeders were exported to the U.S.; still another reason for strong feeder prices in Canada.

The study team is of the opinion that it is very unlikely that NTS payouts for slaughter cattle in the last few years has been any more than a minor determinant of Canadian feeder prices. In fact, the only real test for whether NTS slaughter payouts influence feeder prices, is occurring now as the Canadian packing sector reduces capacity, and demand for feeders has softened due to the recession and oversupply of heavy cattle. As prices decline, NTS will be utilized more extensively as a safety net and will put a floor under feeder prices.

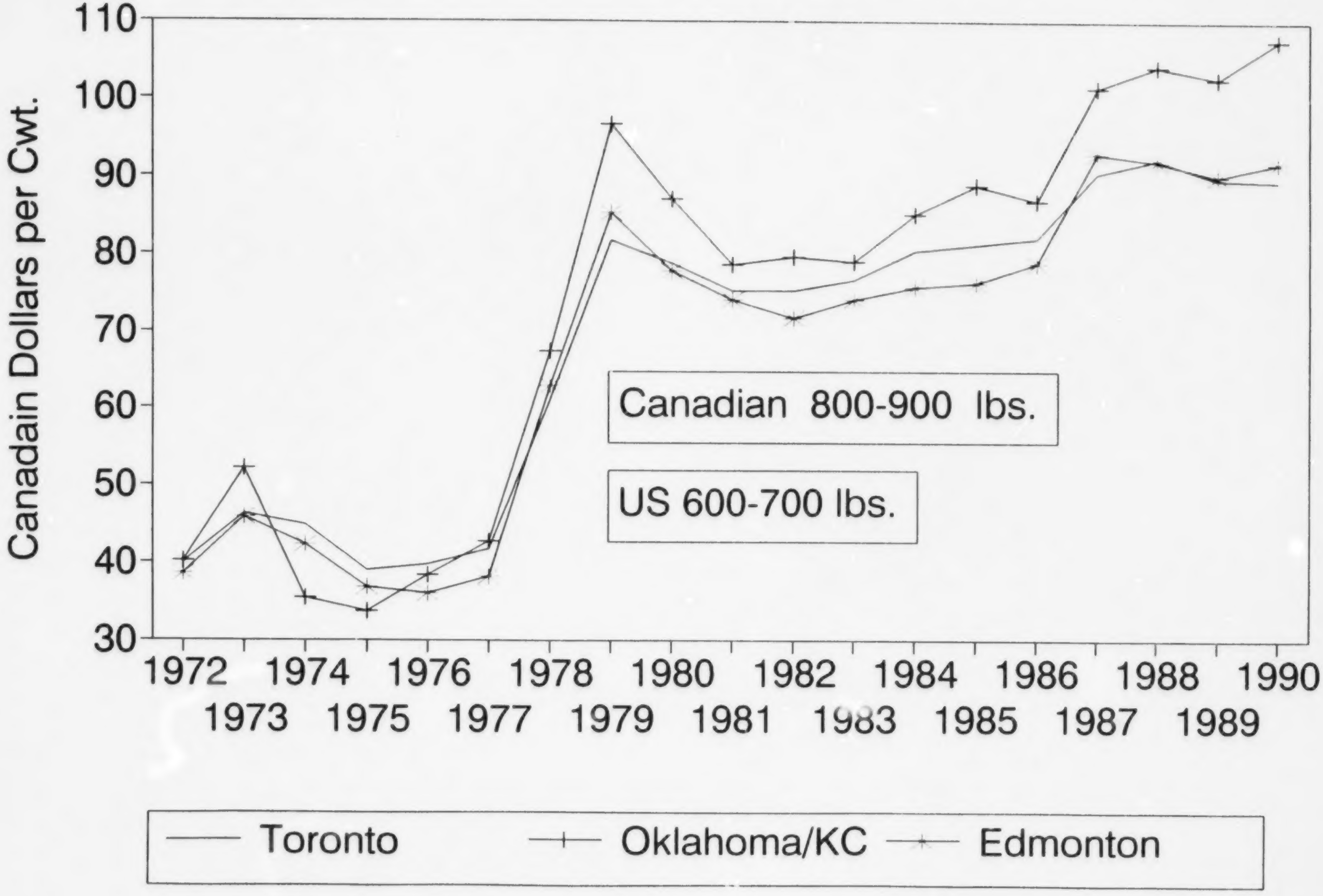
Several behavioural differences with respect to NTS between B.C. and Alberta are noteworthy. First, the Alberta government is very open with the NTS model and has an outlook staff member predicting payouts for industry debate. By contrast, the BCCA does not distribute forecasts on a broad basis due to the speculative nature of forecasts and the inherent potential for liability. It is normally distributed to the BCCA Stabilization Committee for discussion purposes.

At the industry level, there are indications that larger feedlots in Alberta employ a person(s) to thoroughly understand the NTS plan dynamics and to predict payouts so that feeders can be bid accordingly. The presence of a continuously appointed Alberta representative on the NTS producer advisory committee also helps Alberta's beef industry (B.C. has a one year appointment, once out of every three years, and shares its NTS seat with other smaller provinces). This analysis and sharing with producers is only normal when the results are used to guide management of risk. NTS is the Canadian producers risk management program.

Figure IV-2

Canadian - US Feeder Cattle Prices

Annual Average, $CN/cwt.



ii) *Observations and Issues*

Interviews and advisory committee meetings suggest several key B.C. finishers do not analyze expected NTS payouts projections for use in planning. This appears most often among BCACF members and contrasts with the BCCA approach where being familiar with the stabilization programs is important.

To be competitive with Alberta feeders, all B.C. producers (regardless of association or location) need to gather market intelligence information on the probable NTS payment and learn to use this information when planning future actions, after all, it is an important risk management program available to Canadian producers and can effect their competitiveness. Transferring the technology of payment estimation to individual feeders or an independent service bureau would help increase the natural competitiveness of the B.C. cattle producers. Improved knowledge and skill with the predominant risk management tool in Canadian cattle production is critical. A wider distribution of the forecasts (with liability disclaimer) by the BCCA Stabilization Committee and staff charged with the administration of NTS would be helpful as a first step. An independent estimate of the program regularly available to all willing to subscribe to the service is also needed.

2. *Farm Income Insurance (FII) - NTS, Top Up*

a) *Introduction*

FII, now known as the NTS top-up program, is viewed by B.C. cattlemen as the second most important government financial program and provided more net benefits to cattle producers in 1990 than any other program. It is the primary instrument to level the government playing field.

The present FII program is structured around and derives most of its premium and payment calculation from the NTS cattle programs to effectively "top up" the NTS payments. Besides this key functional difference from NTS, the FII program is administered on a cost recovery basis through a fee per head structure (as is the NTS program in B.C.) whereas the governments involved in NTS in other provinces cover the administrative costs.

In addition, the participation rate in B.C. is much greater in the FII program than it is in the NTS program. Based on a comparison of the number of animals registered in FII and the January 1, 1991 inventory of the various classes of cattle (cows, feeders and finished) several points as set out in Table IV-9 can be noted. Almost fifty-three percent of the cow population is registered in the cow-calf plan of FII. (Note that whereas NTS does not specify a minimum number of cows that can be registered, FII excludes farms of under 20 cows and thus this size group of about 265 producers with a total of 1,230 cows are excluded.)

Table IV – 9: FII Cow–Calf Plan Participation By Size Group – 1991

Category	Breeding Female #	Breeding* Female %	Producers #	Producers** %
Total Number	295,000 ***	---	1,550 est.	---
Total in FII	154,973	52.5%	1,257	80% est.
Size Groups:				
20–99 ****	38,943	25.1%	760	60.5%
100–299	69,179	44.6%	425	33.8%
300–499	15,334	9.9%	43	3.4%
500–999	14,161	9.1%	20	1.6%
1000+	17,356	11.2%	9	0.7%
	154,973	100.0%	1,257	100.0%

* percentage of cows registered in FII in 1991

** percentage of producers participating in FII in 1991

*** January 1, 1991 cow inventory in BC (includes beef cows and beef heifers 1 year and over raised for beef herd replacement).

**** The FII cow–calf plan specifies a minimum registration of 20 cows.

--- indicates not applicable. est. indicates consultant estimate from NTS and FII synthesis.

Source: Communications with BCCA, 1991; Statistics Canada, 1991

Because the FII data reflects more than 50% of the total current cow-calf population, some structural changes can be noted since the 1986 census data reported earlier. Because 1986 Statistics Canada census data and FII or NTS preferred groupings are not exactly the same, the "full time" or "intermediate" ranchers previously referred in the "Introduction to Cow-Calf Section" have been reclassified. Ranches with 100 to 299 cows accounted for 44.6% of the cows and 33.8% of the producers in 1991. The "intermediate" ranches between 300 and 499 cows in 1991 accounted for only 9.9% of cows and 3.4% of ranches, down from 24% of the cows and 3% of ranches in 1986 according to Statistics Canada. The FII participation data indicates that in 1991 "large" ranches (over 500 cows) accounted for 20.3% of the cows and 2.3% of ranches (up from 16% of cows and 4% of ranches in 1986).

Note that for the feeder and slaughter plans, the numbers of animals registered in the first quarter of 1991 is used and that participation tends to vary from quarter to quarter. A wide discrepancy existing between cattle on feed by Statistics Canada and by BCMAFF caused the consulting team to use BCMAFF cattle on feed data in Table IV-10.

Table IV – 10: FII Feeder/Slaughter Plans Participation By Size Group

	1ST QUARTER, 1991			
	Steers and Heifers On Feed #	Steers and Heifers* On Feed %	Producers #	Producers** %
Total Number	261,000 ***	16.1%		---
	57,086 ****	73.5%		
Total in FII	41,945		717	
Sales Groups:				
1–99	10,046	24.0%	511	71.3%
100–299	6,943	16.6%	135	18.8%
300–499	5,679	13.5%	33	4.6%
500–999	6,855	16.3%	23	3.2%
1000+	12,421	29.6%	15	2.1%
		100.0%		100.0%

* Percentage of feeder and slaughter cattle registered in FII in 1991.

** Percentage of producers participating in FII in 1991.

*** Statistics Canada; January 1, 1991 inventory of cattle on feed in in BC (includes beef steers, beef heifers 1 year and over raised for beef herd replacement and calves -- beef and dairy not distinguished).

**** BCMAFF Feedlot Survey Summary; December 31, 1990 total cattle on feed.

--- indicates not applicable.

Source: Communications with BCCA, 1991

Analysis showed that approximately 74% of the total cattle on feed were registered in the first quarter of 1991. Using the FII participation data as a proxy for the proportion of cattle on feed (as of December 31, 1990) in B.C., the highest number of producers fit into the very small feedlot category which has less than 100 head of cattle. Only 2.1% of the feedlot operators are in the largest feedlot category which may or may not be classified as "commercial" depending on how stringent are the criteria. The very small feedlots collectively have almost as many cattle on feed as the very largest feedlots in B.C.

B.C. cattlemen were introduced to and learned the FII plans before NTS, even though the present-day FII (NTS top-up) plans are designed using the NTS calculations. Cattlemen have experienced FII payments on quite a regular basis (see Table IV-11). Despite producers tending to depend upon these fairly regular payments, few actually felt comfortable with understanding and predicting the programs behaviour.

A description of the FII program is set out in Table IV-12.

b) *Effects*

Program changes in 1989 enabled the plan to be administered using the same documentation as is submitted for NTS and much of the NTS calculations. This effectively minimizes the administrative costs of both the Ministry and the producer (through both the administration fee and the producers own time in filing reports).

Table IV – 11: Farm Income Insurance (FII or Top–Up) Payouts

			Total Payouts ($ '000)		Total	Payouts per Head	
Month	Year	Cow–calf	Feeder	Slaughter	Payouts	Feeder	Slaughter
	1975	10,601	4,509	0	15,110		
	1976	5,284	9,307	0	14,591		
	1977	4,307	6,210	0	10,517		
	1978	572	1,716	0	2,288		
	1979	0	0	0	0		
	1980	3,232	1,641	657	5,530		
	1981	12,088	4,237	1,012	17,337		
	1982	10,290	2,368	820	13,478		
	1983	8,688	2,783	1,376	12,847		
	1984	7,538	1,100	715	9,353		
	1985	9,140	1,649	1,186	11,975		
	1986	6,379	641	1,150	8,170		
	1987	0	0	970	970		
	1988	2,220	0	1,301	3,521		
	1989	4,182	942	705	5,829		
	1990	3,013	736	1,302	5,051		
	1991	0	334 *	642 *	976		
By month, beginning 1990			--in dollars--				
Jan	1990		58,695	94,271	n/a	25.34	17.14
Feb	1990		224,875	71,913	n/a	27.19	17.48
Mar	1990		215,874	131,521	n/a	27.64	36.97
Apr	1990		167,128	186,620	n/a	18.73	46.86
May	1990		47,838	294,800	n/a	14.94	50.2
Jun	1990		0	113,471	n/a	0	22.21
Jul	1990		0	60,951	n/a	0	12.74
Aug	1990		0	70,450	n/a	0	18.89
Sep	1990		0	64,738	n/a	0	25.96
Oct	1990		0	73,386	n/a	0	32.58
Nov	1990		0	90,636	n/a	0	25.78
Dec	1990		21,098	48,820	n/a	6.65	20.35
					n/a	85	183
Jan	1991		37,782	31,875	n/a	14.77	9.95
Feb	1991		101,037	82,664	n/a	10.55	23.62
Mar	1991		0	76,249	n/a	0	22.05
Apr	1991		0	42,827	n/a	0	16.81
May	1991		0	108,225	n/a	0	36.78
Jun	1991		0	65,267	n/a	0	24.86
Jul	1991		0	73,594	n/a		
Aug	1991		34,489	110,909	n/a		
Sep	1991		160,766	50,821	n/a		
Oct	1991				n/a		

Source: BCCA, 1991

Table IV – 12: FII (NTS Top-Up) Description

Topic	Cow-Calf Plan	Feeder Plan	Slaughter Plan
Introduction in BC	1975	1975	1975
Date of major change(s)	- early '80s (to control costs) - 1989 (to complement NTS as a "top-up")	- early '80s (to control costs) - 1989 (to complement NTS as a "top-up")	- early '80s (to control costs) - 1989 (to complement NTS as a "top-up")
Participation in BC (1991)	293,989 head; 1257 producers	7,825 head; 270 producers 30,402 head; 429 producers (combined plan) (Quarter 1)	3,718 head; 6 producers (Quarter 1)
Administration	done by BCCA paid employees on a cost recovery basis	done by BCCA paid employees on a cost recovery basis	done by BCCA paid employees on a cost recovery basis
Intended purpose	-to provide the opportunity to those producing and selling beef cattle or calves to share the risk of fluctuating prices by paying premiums into the plan and thereby becoming eligible to receive payments out of the plan when payments are triggered as determined by formulae - to offset Alberta subsidies currently in place only; not to offset any natural comparative advantage that Alberta may have	-to provide the opportunity to those producing and selling beef cattle or calves to share the risk of fluctuating prices by paying premiums into the plan and thereby becoming eligible to receive payments out of the plan when payments are triggered as determined by formulae - to offset Alberta subsidies currently in place only; not to offset any natural comparative advantage that Alberta may have	-to provide the opportunity to those producing and selling beef cattle or calves to share the risk of fluctuating prices by paying premiums into the plan and thereby becoming eligible to receive payments out of the plan when payments are triggered as determined by formulae - to offset Alberta subsidies currently in place only; not to offset any natural comparative advantage that Alberta may have
Nature of the payment	price-sensitive Based on NTS calculations (see below).	margin-sensitive Based on NTS calculations (see below).	margin-sensitive Based on NTS calculations (see below).
Payment formula	Payment per cow = (NTS national support price* - NTS national average selling price) X 472.5 (ie. assumed pounds weaned per cow) - NTS benefit/head - producer advance portion of premium (which is $3.50 in 1990/91)	Payment per head = (NTS national support price* - NTS national average selling price) X national average slaughter weight sold that month (approx. 1,150 lbs.) /100 - NTS benefit/head - producer advance portion of premium (which is	Payment per head = (NTS national support price* - NTS national average selling price) X national average slaughter weight sold that month (approx. 1,150 lbs.) /100 - NTS benefit/head - producer advance portion of premium (which is

Table IV – 12: FII (NTS Top–Up) Description

Topic	Cow–Calf Plan	Feeder Plan	Slaughter Plan
	Payment to a maximum of $26.95 if positive, none if not.	$3.50 in 1990/91) Payment if positive; none if zero, or negative.	$3.50 in 1990/91) Payment if positive; none if zero, or negative.
NTS calculations and assumptions	*National support price = 100% X indexed moving average price** (IMAP) (ie. 15% above NTS IMAP)	*National support Price = cash cost for month + 120% of 5–year average margin** (ie. 35% above NTS margin)	*National support Price = cash cost for month + 122% of 5–year average margin** (ie. 37% above NTS margin)
Note:	This percentage is negotiated on a yearly basis.	This percentage is negotiated on a yearly basis.	This percentage is negotiated on a yearly basis.
	Indexed average price = previous 10–year average of deflated price* X (deflator**** / 100)	**5–year Average Margin = five–year national average selling price – five–year national average costs for month	**5–year Average Margin = five–year national average selling price – five–year national average costs for month
	Deflated price = national average selling price / (deflator* / 100) ****Deflator = gross domestic product implicit price index	To calculate selling price: The National Average Selling Price of feeder cattle is a weighted average price of heifers weighing 700–800 lbs. and steers of 800–900 lbs. sold at Edmonton for Alberta and BC.	To calculate selling price: For Alberta and BC, prices collected Agriculture Canada for Alberta are used. Weekly A1, A2 rail grade prices are converted to live weight equivalent prices assuming that steers dress out at 58.5% and heifers at 57%. These are then converted to a monthly average. Alberta and BC provincially inspected slaughter volumes weight (slaughter + exports – imports) weight the Alberta prices to be used in the national average selling price.
	Weaning rate is 90% (used in calculating the assumed lbs. weaned per cow) Prices for 500–600 lb. steer calves and 400–600 lb. heifer calves sold in September, October, November and December at Edmonton stockyards are weighted by BC and Alberta beef cow numbers from January Statistics Canada inventory report (used in the National Average Selling Price)	To calculate costs: Calf prices are determined from average selling prices of 500–600 lb. steer calves and 400–600 lb. heifer calves at Edmonton (representing Alberta and BC). The months in which the calves are purchased for a particular sales month, three rates of gain are used: 1, 1.75, and 2.5 lbs. per day for heifers, and 1, 2 and 2.75 lbs. per day for steers. Thus "days of possession" range from 4 to 11 months. The cost of the mix of calves is the average from the markets across Canada during those periods, weighted by the percentage sales of backgrounded	Shrunk weight is used on final wt. To calculate costs: For replacement cattle, in the west, for Alberta/BC short keep prices are the average of 800–900 lb. steers and 700–800 lb. heifers sold at Edmonton. Calf prices are determined from average selling prices of 500–600 lb. steer calves and 400–600 lb. heifer

Table IV – 12: FII (NTS Top-Up) Description

Topic	Cow-Calf Plan	Feeder Plan	Slaughter Plan
		heifers and steers from each area. Feed costs are calculated as 75% of the cost per pound of gain for heifer and steer calves taken to 800 lbs. and 900 lbs. respectively in the slaughter cattle option. Interest costs are calculated on the purchase cost of replacement cattle only using the monthly average of the chartered bank prime rate plus 1% and based on the length of possession as discussed above.	calves at Edmonton. Prices are weighted by regional, federal and provincial inspected slaughter volumes. A estimated proportion of replacements (yearlings and calves) based on the month of sale is used. Type of animal is large frame/ compensating medium frame. For feed costs, in the west, formulation done by Alberta Agriculture and barley, silage and supplement are Alberta values and average analysis of Alberta feeds done by Alberta Agriculture. Alberta feed efficiencies are assumed. Interest costs are calculated on the purchase cost of replacement cattle only using the monthly average of the chartered bank prime rate plus 1%. The time used is the preceding 8 and 7 months for steer and heifer calves respectively and 4 and 3 months for short keep steers and heifers respectively in the West.
Conditions of payment/eligibility	Do not have to have sold calves, but based on the number of cows and bred heifers owned and registered April 1st of each year.	Eligible Sales: - all sales of steers and heifers sold for slaughter that graded A, B, or C (or	Eligible Sales: - all sales of steers and heifers sold for slaughter that graded A, B, or C (or price equivalent) with

Table IV – 12: FII (NTS Top-Up) Description

Topic	Cow-Calf Plan	Feeder Plan	Slaughter Plan
	Producers with less than 20 cows are excluded.	price equivalent) with a carcass weight of 330 lb. or more – all steers sold live at 1050 lb. or more and heifers sold at 900 lb. or more provided the price received meets the price equivalent to Grades A, B or C, or sold railgrade must meet criteria set out under the slaughter option to be eligible – all sales of bred heifers regardless of weight – sales of bulls sold at liveweight less than 1050 lb. Cattle must be owned or weaned 60 days prior to sale to be eligible. Ineligible sales: – sales of animals purchased or weaned less than 60 days prior to sale – slaughtered animals grading D or E (or price equivalent) – sales of steers and heifers with a carcass weight less than 330 lb.	a carcass weight of 330 lb. or more – all steers sold live at 1050 lb. or more and heifers sold at 900 lb. or more provided the price received meets the price equivalent to Grades A, B or C with proof of weight (eg. scale ticket or certification of scale operator) – all sales of bred heifers over 900 lb. – cattle shipped out of province must meet the minimum live weights for slaughter cattle at the time of leaving the province or be slaughtered within 45 days of leaving and brand certificates must be submitted Cattle must be owned or weaned 60 days prior to sale to be eligible. Ineligible sales: – sales of animals purchased or weaned less than 60 days prior to sale – slaughtered animals grading D or E (or price equivalent) – sales of steers and heifers with a carcass weight less than 330 lb. – sales of steers sold liveweight under 1050 lb. or heifers sold under 900 lb. without proof of slaughter
Timing of calculation	Yearly (January/February after the NTS calculations are complete)	Monthly	Monthly
Timing of payout	Yearly (before April 1 after the announcement is made)	Quarterly (Producers can expect to receive cheques approximately 72 days after the end of a quarter.)	Quarterly (Producers can expect to receive cheques approximately 72 days after the end of a quarter.)
Enrollment/Late Entry	If own 20 or more cows/bred heifers April 1 the	If sell 10 or more eligible animals in 12 months	If sell 11 or more eligible animals in 12 months

Table IV – 12: FII (NTS Top–Up) Description

Topic	Cow–Calf Plan	Feeder Plan	Slaughter Plan
	year prior to enroll– ment, of the potential payouts, receive 25% the 1st year, 50% the 2nd year and 75% in the third year and then full benefit all the while paying full premiums. First time enrollments must send a $25 application fee, along with the application forms, opening inventory and premiums. This is a one–time charge regardless of the options enrolled in.	prior to enrollment, of the potential payouts, receive 25% the 1st quarter, 50% the 2nd and 3rd quarters and 75% the 4th quarters, and then full benefit all the while paying full premiums. If sell less than 10 animals, entitled to full benefits in 1st quarter. First time enrollments must send a $25 application fee, along with the application forms, opening inventory and premiums. This is a one–time charge regardless of the options enrolled in.	prior to enrollment, of the potential payouts, receive 25% the 1st quarter, 50% the 2nd and 3rd quarters and 75% the 4th quarters, and then full benefit all the while paying full premiums. If sell less than 10 animals, entitled to full benefits in 1st quarter. First time enrollments must send a $25 application fee, along with the application forms, opening inventory and premiums. This is a one–time charge regardless of the options enrolled in.
Registration	ALL beef cows owned as of April 1 that have either calved between January 1 and March 31, or bred to calve before the end of the year are registered, premiums and fees paid, and inventory report filed by April 15. Leased cows are to be covered by the actual owner only. No credits on registered cows and payments that are triggered will be paid even if a registered animal has died, etc.	ALL weaned calves and purchased feeder calves and cattle owned are to be registered and premiums (as described above) and fees payed on these animals by the 15th of the month following the end of the quarter. Premium credits are available for cattle that die, are transferred to the breeding herd, are sold within 60 days of purchase or weaning, or are do not grade A, B or C when sold railgrade. Detailed reports explaining sales, deaths, weanings, purchases, and and breeding herd transfers must be submitted quarterly.	ALL weaned calves and purchased feeder calves and cattle owned are to be registered and premiums (as described above) and fees payed on these animals by the 15th of the month following the end of the quarter. Premium credits are available for cattle that die, are transferred to the breeding herd, are sold within 60 days of purchase or weaning, or are do not grade A, B or C when sold railgrade. Detailed reports explaining sales, deaths, weanings, purchases, and and breeding herd transfers must be submitted quarterly.

Table IV – 12: FII (NTS Top–Up) Description

Topic	Cow–Calf Plan	Feeder Plan	Slaughter Plan
Premium payment from producers	There are two parts to the premium payment schedule: (1) Advance portion which is paid when animals are registered ($3.50 in 1990/91) (see "Payment formula" above) plus (2) Non–advance, Discount portion based on the NTS calculations for that year, or an arbitrary negotiated ceiling...which ever is less and is subtracted from the payment if positive. a) 1/2 [(NTS national support price – NTS national average selling price X 472.5 (ie. assumed pounds weaned per cow) – NTS benefit/head] – advance portion of premium or b) $17.95 Formula (2) acts to defer the balance of the premium until a benefit is realized. It acts somewhat like a deductible. The advance portion of the premium in (a) is subtracted since that portion was already paid the previous year. (2b) acts as a cap on the discount premium.	There are two parts to the premium payment schedule: (1) Advance portion which is paid when animals are registered ($3.50 in 1990/91) (see "Payment formula" above) plus (2) Non–advance, Discount portion based on the NTS calculations for that year, or an arbitrary negotiated ceiling...which ever is less and is subtracted from the payment if positive. a) 1/2 [(NTS national support price – NTS national average selling price X 472.5 (ie. assumed pounds weaned per cow) – NTS benefit/head] – advance portion of premium or b) $17.95 Formula (2) acts to defer the balance of the premium until a benefit is realized. It acts somewhat like a deductible. The advance portion of the premium in (a) is subtracted since that portion was already paid the previous year. (2b) acts as a cap on the discount premium.	There are two parts to the premium payment schedule: (1) Advance portion which is paid when animals are registered ($3.50 in 1990/91) (see "Payment formula" above) plus (2) Non–advance, Discount portion based on the NTS calculations for that year, or an arbitrary negotiated ceiling...which ever is less and is subtracted from the payment if positive. a) 1/2 [(NTS national support price – NTS national average selling price X 472.5 (ie. assumed pounds weaned per cow) – NTS benefit/head] – advance portion of premium or b) $17.95 Formula (2) acts to defer the balance of the premium until a benefit is realized. It acts somewhat like a deductible. The advance portion of the premium in (a) is subtracted since that portion was already paid the previous year. (2b) acts as a cap on the discount premium.
From provincial government	Amount equal to producer cash portion ($3.50) plus amount equal to producer discount premium (ie. amount matching producers full premium).	Amount equal to producer cash portion ($3.50) plus amount equal to producer discount premium (ie. amount matching producers full premium).	Amount equal to producer cash portion ($3.50) plus amount equal to producer discount premium (ie. amount matching producers full premium).
Administration fees paid when registering	$.10/head (maximum $200)	$.20/head (maximum $300)	$.20/head (maximum $300)
Netted off indemnities	$.10/head	$.40/head	$.40/head
For late registrations	$10/report	$10/report	$10/report

A change implemented early in 1991 requires that animals not stay in Alberta longer than 45 days for eligibility under the B.C. feeder and finisher FII programs. This restriction affects cattle registered after July 1, 1991. Although, at the time of this study, it was too soon to see actual affects of this program change, producers that factor FII into breakevens will certainly have to weigh the benefits of sending animals to Alberta for more than 45 days to be finished while retaining ownership, against the loss of eligibility for FII payouts. This change may in fact discourage producers from retaining cattle when Alberta cost of finishing are lower.

An additional implication is that provincial portions of the NTS payments/premiums will now come from the B.C. Ministry instead of from Alberta's Treasury on animals that are retained in B.C. for finishing rather than going to Alberta for finishing. This may prove to put more pressure on B.C.'s FII funds, thus causing the program to be less "rich" in the future. Depending on the predictability of the FII net payments, cattle producers who are willing to retain ownership regardless of the finishing location should weigh carefully the costs of sacrificing FII eligibility when moving to Alberta, against the greater margin of finishing the animals in other than B.C. feedlots.

The predictability of payouts and premiums is key in determining the effects that the program has on the behaviour of its participants. The FII slaughter option has paid out in each of the last 13 years and in each of the last 21 months (January 1990 to September 1991) and the net payout has not gone below $9.95 per head. The general belief, especially with respect to the slaughter program, is that the payout of FII is virtually inevitable. This is not the case with the cow-calf and feeder programs. The cow-calf program did not pay out in 1991 and is not expected, by the

BCCA FII/NTS administration office, to pay out in 1992. The feeder program only paid out in 10 out of the past 21 months. Thus, (January 1990 to September 1991) FII tends to favour finishing in B.C. over the other two subsectors -- that is, if the participants include FII in their breakevens and planning.

Like NTS, two sets of logic exist in B.C. as regards the handling of FII payouts and premiums in calculating breakevens and cash flows. The more aggressive producers include an FII estimate, while more traditional backgrounders or feeders exclude FII. Those who put FII payouts into breakevens have a better idea of exactly how much can be bid for calves, and are more apt at filling their pens. Producers who consider payouts only as an "after the fact" payment, or as a safety margin and do not consider FII payments in breakevens, effectively reduce purchasing power. Thus, by being more cautious and excluding FII, these producers miss procurement opportunities, and are less likely to use their facilities at full capacity to more effectively spread out costs. Therefore, FII can effect the individual operations perception of competitiveness favourably or adversely depending on whether the individual uses the program to its fullest potential by including it in procurement, production and marketing plans. Facilitating the understanding and prediction of the program would thus be beneficial to the industry.

Should the cattle feeding industry become more responsive to use of FII payouts in breakeven calculations, it might foster the backgrounding subsector and the cow-calf sub/sector because a more accurate understanding of costs could be achieved. The cattle feeder will realize that he/she can "afford" a higher breakeven purchase price for feeder cattle and calves, thus transferring a portion of the benefits of the program to the supplier(s). Also, this would also be beneficial through the development of a greater feeder supply and accompanying supply industries. The FII program does not directly influence producers to advance sell cattle in months which expect a payout like the NTS program does. The program is more consistent with its payouts such that payouts tend to be considered the "norm" and are easily discounted when preparing marketing plans. Also, since FII is now closely tied to NTS calculations and payouts, the NTS program overshadows the perceived effects of FII. Producers may often market more aggressively when there is an FII payout, however the action is consciously tied to the spinoffs of the NTS payout rather than the FII payout.

Within the slaughter plan, no distinction is made between long-keep and short-keep cattle. That is, one payment is specified regardless of whether the animals registered are short-keep or long-keep. Yet more costs are incurred with long-keeps. Thus, the slaughter plan theoretically fosters short-keep feeding over long-keep feeding. However, evidence was not found that proved this decision modification does indeed occur on a wide-spread basis. More often than not, FII was not considered at all when making these type decisions. The over-riding effects of NTS, however, may cloud this decision since NTS payments are not based on the length of keep either. There are certainly many other over-riding factors that affect the "overall" decision to favour one production scheme over the other (e.g., cattle cycle, type of cattle, markets, relative input costs, and similar factors); therefore, definitive determination of FII's effects on the decision making process are uncertain.

c) *Observations And Issues*

The three FII programs need to be thoroughly learned and understood by producers (i.e., how they work, what effects payouts, prediction models, and the like) so that when they do influence market patterns, producers can assess the outcome before it happens. Learning FII would also enable them to take a more aggressive, competitive position when procuring feeder animals, feed, and other key production inputs.

The stabilization advisory committee needs to have not only representation and input from cow/calf and cattle feeders but also from meat processors. This would help ensure that information and knowledge is not only transferred to the committee, but from the committee to producers, feeders, processors and others with an interest in the program.

As a second line of defence program, FII would likely receive the same attention as NTS would from any GATT or U.S. countervail initiative against Canada. Any move to make FII a more predictable, "bottom loading" subsidy should carefully consider these external trade implications since shipment to the U.S. is especially important to B.C.

3. The Feed Freight Assistance (FFA) Program

a) *Introduction*

Federal Feed Freight Assistance was ranked the number one concern of the study team advisory committee and its retention has been BCCA policy for many years and was a recommendation of the BIDC strategy committee. Therefore, the consultants looked at the implications of retention in its current form and noted inter-regional implications. When checking net benefits and FFA research in Ottawa, authorities indicated considerable willingness on the part of the Maritimes to restructure FFA expenditures within the context of a transportation policy. This comes about due to a review of Crow rates that form a part of the federal/provincial transportation policy review. B.C. for some reason has been less involved (because the industry is so sensitive).

To generate better communication, the study team asked Kurt Klein, the independent economics researcher who has evaluated the impacts of FFA and Crow, to the second study team advisory committee meeting.

FFA was initiated over 49 years ago at a time when a defined feed deficit existed in both B.C. and eastern Canada and Canada wanted to "jump start" meat production to support the Second World War effort. The significance of the program as a national policy has declined since 1976 when the program benefits were removed from southern Ontario and western Quebec following extensive development of corn production in those areas and important changes in the competitive position of feeders in central Canada. Since 1977, the level of subsidy has been largely fixed in B.C.

The stated objective today of FFA under the federal Livestock Feed Assistance Act is "to assist in equalizing the cost of feed grain transportation in feed deficit regions". Industry believes the current program approach should aid in the development of all regional livestock sectors (including dairy and poultry that have price setting marketing boards). There is no government commitment to equalized feed grain prices -- only to assisting in the equalizing of feed transportation costs from Canadian origins.

b) *Effects*

From the perspective of economic theory, payment of livestock support through FFA discourages local production of grains (where production is possible in B.C. such as Bulkley) and especially distorts the natural advantage of the Peace's grain producing capabilities. Furthermore, regions in close proximity or easy access to Alberta grains (Armstrong) are discouraged by the "equalized freight" objective in favour of areas of high freight (and therefore high FFA) like the Fraser Valley. FFA plus federal import license requirements on barley and wheat have occasionally discouraged importation of competitive American corn, barley, or feed wheat out of Washington state or locations farther east.

The present average rate within each region is set out in Table IV-13; certain towns in a region may be more or less than shown; however, simplification for analysis purposes was necessary. Some minor, as yet confidential rate adjustments, are under discussion for implementation in 1992 due to freight rate shifts and pressures from industry. The Fraser Valley stays constant; most regions change by plus or minus $.60 per tonne of FFA. Region 4 drops by more than one dollar per tonne because assistance was higher than the freight and is being adjusted downward. These changes are subject to pending federal approval.

Unlike most subsidies evaluated in this report, FFA is clearly embedded in the published price of barley. That is, the barley prices used in this study (Table IV-13) and widely published by the federal Livestock Feed publication are done after FFA is deducted. A quick review of Table IV-13 indicates the barley prices are not equalized as a result of FFA. There are still "naturally" higher barley costs across B.C. much like Washington state has considerably higher barley costs than Montana (or Alberta). Hence the minor changes to FFA levels over the years has not unduly increased distortion of the natural price advantage of the Peace (B.C.) and Alberta regions.

The Maritimes are assessing change to FFA partly because areas like Bulkley, that can grow a small amount of grain, are either discouraged from production by the lower price (after freight) or incur extra transfer costs. They sell farm grown grain while buying imported or neighbor's grain just to get the $11 per tonne subsidy. A direct payment per tonne like the Crow Benefit Offset would be more suitable for this area. A federal study on FFA, by Dr. Kurt Klein was reviewed by the advisory committee, but in the teams view no clear alternatives to FFA were apparent and practical for B.C. Better communication by the B.C. industry with this review group headed by Dr. Klein would ensure lessons learned by the Maritimes or other provinces are quickly captured by B.C.

The process for receiving FFA has its costs. The requirement for going through a grain broker causes the producer to incur at least $3 to $5 in brokerage fees, $6 to $7 if the grain goes through an elevator facility. Regulatory requirements are such that associated paper-work, grade certificates, invoicing, and proof of scale weight, also add to costs. The FFA program encourages producers to assume these additional costs rather than purchase grain at lower farm gate prices.

Table IV – 13: Feed Freight Assistance Rates in 1991

Region	Present Rate	Barley Price	Barley price excluding FFA	Price excl FFA Relative to Alta.	New Proposed Rate*
		—per tonne—			
Alberta	$0.00	$72.00	$72.00	0	$0.00
1. Fraser Valley	$11.50	$100.00	$111.50	$39.50	$11.50
2. Southern Interior	$8.00	$98.75	$106.75	$34.75	$7.60
3. Kooteney	$4.50	$95.00	$99.50	$27.50	$4.00
4. Cariboo–Chilcotin	$18.00	$80.00	$98.00	$26.00	$12.00
5. Bulkley–Nechako	$11.00	$66.00	$77.00	$5.00	$11.50
6. Peace River	$0.00	$68.00	$68.00	($4.00)	$0.00

Note: Rates are simple averages of the rates significant to the beef feeding industry within the regions delineated for the study. (For example region 2 ranges $4.50 to $11.50.)

** Subject to approval sometime in 1992

4. *Statutory (Crow) Grain Rates*

As redefined under the federal Western Grain Transportation Act (WGTA), the federal government subsidizes rail exports of grains, oilseeds, and screenings from the Prairies and the B.C. Peace to Vancouver, Prince Rupert, and certain other Canadian ports. The act provides for a Western Grain Transportation Agency that helps railcar coordination and indirectly affects the availability of non-board feed grains by rail to livestock feeders. The study team found no problems with availability of grain from Alberta or the B.C. Peace, so comments will be limited to the subsidy effects.

The WGTA provides for costing and regulatory procedures that establish annual freight rates for movement of western grain by rail to export locations. They also; determine the proportion of the freight rate to be paid by the federal government. In 1991/92 the federal government will pay directly to the railways $21.10 per tonne of grain moved from the average prairie location. The grain producer will pay the remaining $11.07 per tonne (or 34%).

The impact of WGTA payments to railways on the livestock producer in the prairies and B.C. (who obtain most of their barley from WGTA areas) are its upward effect on feed prices. The upward price effect can amount to as much as $20.03 ($21.10 minus $1.07) at an average prairie location, but is less at locations nearer ports. The subsidy does not increase each year as the government commitment is capped unless inflation is extremely high. A careful review of WGTA rate impacts by Klein and others in 1991 showed the maximum subsidy effect to be about $15 per tonne at Dawson Creek and about $16 per tonne at Olds (where much of the B.C. grain is assembled). Klein found major welfare gains to Western Canadians under all change options.

In early 1992, major consultations are planned with producers across Canada. Input will be sought on how to change this policy. A federal / provincial flyer entitled "Transportation Talks" that was circulated in late December. It outlined four options and their implications if implemented. Beef industry people should plan to attend one of the three meetings to be held in B.C. (Dawson Creek, Abbotsford, and Vancouver). Change will move quickly if the GATT talks result in a January 1993 commitment to lower export subsidies.

Compared to earlier research on the WGTA, recent research shows much more modest improvements to the Alberta beef economy, because the Crow Benefit Offset (CBO) has already accomplished the increase and consolidation of beef feeding in Alberta. Klein estimates B.C.'s beef herd will increase by only 0.5% if the Crow rates were changed with no compensation and 0.4% if the grain producer received compensation for loss of the rate. In Klein's and the study team's view, eventual removal of the $16 per tonne subsidy will result in about a $12 per tonne price drop if normal market pressures bring forth efficiencies.

A further reduction in the potential benefit of Crow rate changes to B.C. and Alberta would result if the grain sector chose to simultaneously correct distortions in the Canadian Wheat Board Pooling system. Currently, Alberta must pay for part of the freight through the expensive St. Lawrence system and this results in Alberta, barley prices that are approximately $5 lower. Hence, if pooling changes move Alberta prices up about $5 per tonne and method of payment changes move prices down $16, the net effect will be $11 per tonne lower freight charges. Yet transportation efficiencies may consume $4 per tonne of this extra freight savings, leaving B.C. a $7 per tonne lower cost for feed bought in Alberta.

This potential B.C. gain of $7 per tonne contrasts with Alberta where plans to simultaneously remove the $10 CBO subsidies to feeders would mean a $3 loss in Alberta feeding competitiveness if Crow rates are changed. Hence, B.C. could significantly gain and effectively zero out the CBO if the WGTA ("Crow") rates were to be increased. In the future scenarios section of this report a synthesis of this eventuality with FFA and trade induced changes is prepared.

5. *Feeder Association Guaranteed Loan (FAGL) Program*

The B.C. (FAGL) program is modeled after Alberta's, but with a few differences. How the program works and these differences are outlined in this section.

Feeder associations are cooperatives that obtain financing through commercial banks, partially guaranteed by government, and retain ownership of the cattle. An association elects a board of normally five to eleven directors who elect a president or chairman who hires a secretary/treasurer and supervisor. The secretary/treasurer handles the administration of the loans. The secretary also does credit checks from the information supplied on the producers application form. The supervisor ensures that the program is not being used fraudulently and that members have adequate production provisions to handle the number of cattle for which funds are requested. This information is then relayed to the board of directors. The directors approve or disapprove an applicants membership with the association.

The FAGL program specifies several constraints as dictated by the association rules and standards of its board of directors. For instance, the members must be a minimum of 18 years of age, and must be an individual rather than a company. The member must be a bonafied farmer who actively grow and feed cattle, or want to. Members can put cattle into someone else's feedlot, as long as the member owns or leases land

and facilities and has access to adequate feed should the cattle have to be brought back home from the other feedlot. This restriction is policed by the supervisor. Thus, very little business investment interest is generated by this program.

Feeder Associations carry risk cooperatively. By contributing equity of five percent of the value of the cattle, feeder association members can have livestock purchased by the association on their behalf subject to approval by the local board. The revenue from the marketing of feeder association cattle is received first by the feeder association by virtue of its brand, and any funds left over after payment of the loan is forwarded to the producer. Loans are quite competitive at (prime to prime plus 1/4%). The government guarantees repayment of 25 percent of the loan amount authorized to be borrowed by an association. Members may lose all or part of their 5 percent security deposit on a pro-rata basis if the Association is required to repay any of its members' defaulted loans. As security deposits must be maintained at the 5 percent level, members may be required to replenish the assurance fund if payment from it has been made.

According to Nilsson (Nilsson 1991), prolific development of feeder associations in Alberta, and to some extent in Saskatchewan, has had much of an effect, even more than Tripartite stabilization or any other government program, on the demand for feeder cattle. He suggests that for an industry that is inherently short of reasonably priced financing, feeder associations of Canada are one of the reasons the Canadian industry expanded quickly. By comparison U.S. feeders without this program were more controlled by the banking industry and hence had larger equity requirements and did not expand as fast. Nilsson credits at least 50 percent of the recent expansion in backgrounding and feeding to the rapid rise of feeder associations.

Whereas the Alberta (FAGL) program is set up under its own act (the Feeder Associations Guarantee Act), the B.C. program is temporarily set up under the previously existing Financial Administration Act (Section 56). The program was set up this way to not slow its administration, and will eventually (although there is no rush) be set up under its own act. The program itself will not necessarily undergo any fundamental changes, however, and a specific act will allow amendments to be made easier and quicker than redoing the agreement each time a change is made. An entity called the Feeder Associations of Alberta exists in part to look after the insurance aspect of the individual associations in Alberta. Namely, it looks after an Indemnity Trust into which premium money ($1,039,000 in 1989) is placed. Funds not claimed go back to the associations as a rebate ($366,715 in 1989). Two plans exist under the Indemnity Trust to insure the producer (and association) from animal losses (e.g., death). One charges 1% of the purchase price of the feeder animals with a deductible of 2% of the purchase price. The other option charges 0.5% of the purchase price of the animals and has a deductible of 5%. Both cover the animals for a period of 365 days. The Feeder Associations of Alberta also take care of the administrative costs of bonding. This type structure does not exist in B.C., however, the Feeder Associations of Alberta allow B.C. Associations to join in the Indemnity Trust saving the B.C. associations the time and money of setting up their own structure for relatively few members.

In Alberta, new feeder association members can have up to $30,000 worth of livestock purchased by the association on their behalf. After one year, members may receive up to $100,000 worth of livestock subject to approval by their local board. The entry level for a B.C. member is a maximum of $25,000 increasing to a maximum of $50,000 after one year and $75,000 after two years.

The FAGL program began in the mid to late 30's and local feeder associations (which must be formed as cooperatives) are situated in most communities throughout the province of Alberta. To date, Alberta has 60 associations varying in size and encompassing approximately 5,700 members throughout the province as of the fall of 1991. They collectively have lent out about $225,000,000 accounting for the purchase of approximately 375,000 head of cattle in fiscal year (September 1, 1990 to August 31, 1991). In 1980, the Feeder Associations' of Alberta loaned $26 million in Alberta while in 1989 they loaned over $160 million. Thus far the track record for defaulted loans has been good. Feeder associations had to tap into the 5% security deposits collected on the value of cattle purchased about ten years ago and then at only 1/4 of 1% of the value of the cattle. In the 1950's loans were defaulted in Alberta primarily due to incidence of hoof and mouth outbreak. Incidence of fraudulent use is also recorded.

Feeder associations exist at five locations in B.C. as of October, 1991. The five B.C. Feeder Associations are located in Vernon, Williams Lake, Vanderhoof, Dawson Creek, and Quesnel. The Okanagan Feeders Cooperative Association (Vernon) is the first one to form shortly after B.C. accepted the program in September of 1990. The Dawson Creek and Quesnel cooperatives are the newest associations starting in August 1991. While Dawson Creek is new to the current B.C. program, it has been an Association in place for a number of years.

B.C. currently has 5 associations encompassing approximately 400 members and currently have a ceiling of $10 million to work with. Nine million dollars are committed to feeder associations at present. The following list shows the breakdown of funds committed as at October, 1991:

Okanagan Feeders Coop Association	$2 million
Central Interior Feeders Coop	$2 million
Dawson Creek Feeders Coop	$2 million
Cariboo Chilcotin Feeders Coop	$1 million
Quesnel Feeders Coop Association	$1 million*

* *Doesn't own cattle yet; started in August of 1991.*

As yet there are no defaults on the feeder association loans in B.C.

The creation of a breeder program to finance the purchase of cows and heifers for breeding stock has been brought up in both Alberta and B.C. This type program is very controversial. It would foster the expansion of the cow herd and help decrease the fraudulent use of the feeder program by keeping animals bought under the feeder program for breeding purposes. On the other hand, it is argued that the program could adversely distort the market by increasing the supply of calves; and thus decreasing prices and market returns causing, especially those farmers lured into cow-calf production by the program, to face financial difficulty.

The cow-calf producer and the forage grower also reap benefits from the feeder program. In addition to improving the market for feeder calves, the cow-calf producer can sell the calves to the Feeder Association and take the loan on the calves to retain them on the farm to feed them. The supervisor judges the weight and market value of the calves, and the association may finance 75% (to allow room for supervisor judgement error without the benefits of weight scales and auction price determination) of the value of the feeder cattle. The producer must still put down 5% of the value of the cattle at the time of feeder association purchase.

In summary, the FAGL program avails competitive financing on feeder cattle with limited risk on government's and producer's part. A certain amount of peer pressure due to all members paying should there be a default on a loan assists in this respect. The program also encourages producers to retain calves for feeding and grassing. By a government official's rough estimation, if the number of calves which stayed in B.C. to be fed could increased by 20,000 head, $6 million in added value would be realized. And by increasing the market for calves, the production of forage thus leaving the land in permanent cover is encouraged.

6. *Gross Revenue Insurance Program (GRIP)*

a) *Introduction*

The Gross Revenue Insurance Program (GRIP) is a tripartite safety net introduced for Western Canadian grain farmers in 1991 under the same FIPA federal legislation as NISA. Like NTS for cow-calf producers, it provides for support to 85% of an Indexed Moving Average Price (IMAP). Yet the grain IMAP is calculated over 15 years while the livestock IMAP is more market responsive in its calculation over 10 years. The 1991 Grip program provides predictable target revenues for a wide range of crops excluding forages and led to the first payouts in November of 1991 and expected payouts in April, July, and November of 1992 for 1991 grain production. GRIP pays out for all grain enrolled, regardless if farm fed, stored into the next year, or marketed into export or domestic feed channels. GRIP has been a significant and complex addition to the B.C. and Alberta grain sectors where only preliminary research points to implications.

b) *Implications*

For the B.C. beef industry, four issues arise out of GRIP that hold important implications over the next few years. First, are some critical concerns within the grain sector that may have minor transitional benefits for the B.C. beef sector. According to Dr. Daryl Kraft of the University of Manitoba, the high initial program target price levels distorted grain production towards more total acres planted, (about 9% more barley) and less forages with the possible result of: (a) cheaper cereal grains for Alberta and B.C. beef producers relative to the PNW, and (b) less forage expansion in Alberta and the B.C. Peace than would have happened had the grain industry been left with just the low grain prices.

Secondly, and negative to beef producers, during the fall of 1991, new National Grains Bureau estimates of average market prices for the whole crop year ending in July 1992 were set quite high despite large crops of barley and wheat. From KenAgra's interaction with Alberta grain producers, these estimates supported barley and nonboard wheat market prices during the fall despite the oversupply of grains. Hence, these new GRIP estimates may have tempered expansion of Canadian cattle feeding relative to the PNW. Estimates for market price averages for 1991/92 were $85/tonne for #3 wheat and $72/tonne for #1 feed barley to mid October. The third and more significant (negative) effect of GRIP on the B.C. beef sector was thought to be with regard to indirect subsidies to silage production in Alberta that are not available in the B.C. GRIP program. The key difference is that Albertans who harvest grain as silage could technically get a GRIP payment (and thus feed cheaper silage) while B.C. silage producers were specifically excluded from harvesting corn or other grains as silage if they wished to benefit from GRIP.

The BCMAFF did a 1991 evaluation of the potential Alberta benefit from collecting GRIP or silage production and found it to only be $.24 to $.48 per head for steers and $.11 to $.39 per head for heifers (depending on the Alberta location). This Alberta benefit was so small and judged insignificant for that year for four reasons:

- Very large barley yields in 1991 lowered the GRIP payment net of premiums to $3.82/acre ($9.44/hectare) in Lethbridge and $7.92/acre ($19.57/hectare) at Airdrie according to BCMAFF.
- Only approximately 40% of the barley silage was covered by GRIP, according to Alberta officials, during the first year of the program.
- GRIP payouts are very slow -- over 15 to 18 months -- and hence have to be discounted by the interest rate.
- Much of the barley silage in heavy feeding areas is contracted, rather than grown by the cattle feeder. Therefore, GRIP payments would be captured normally by the grain producer, not the silage buyer. Hence, much of the perceived benefit from GRIP does not pass through to the cattlemen.

KenAgra reviewed the BCMAFF methodology carefully in light of its extensive experience with GRIP and silage pricing in Alberta. The analysis showed the BCMAFF approach acceptable for 1991. However, in 1992 more GRIP benefit to silage may be captured by Albertans because of: (1) 1992 adjustments to individual long term average yields in Alberta (where three years of superior barley yields are sufficient to amend coverage); and, (2) adaptive behaviour by Alberta grain and cattle producers in 1992 that increases participation in silage coverage beyond 40%.

Yet the barley IMAP is expected to drop and premiums may rise so estimated net payouts are likely smaller per tonne in 1992 and especially 1993. Perhaps benefits of GRIP will be negative by 1994. Considerable change is also expected in the administration of GRIP once GATT decisions become clear in early 1992. In this respect GRIP is considered "orange" and may need to be made more neutral between commodities.

Finally, GRIP may be amended to include forages. This should be closely monitored. Information to date indicates no plan to include forage in the 1992 GRIP program for any province, but a subcommittee of the producer advisory committee is reviewing the issue (with Canadian cattlemen association making inputs) and B.C. cattle producers will want to keep in touch with Gary Scott, the B.C. representative on the GRIP committee.

c) *Observations and Issues*

It is impossible to predict at this time what 1992 or 1993 livestock benefit will accrue from a GRIP that is different in Alberta vs. B.C. It is believed silage contracted by intensive feeders will not capture much of the GRIP net benefit into southern Alberta irrigated silage. Also, many foothills cattlemen in Alberta grow only hay for cows or backgrounding and would also not benefit from GRIP. However, for cattle backgrounded or finished by smaller enterprises in central or northern areas of Alberta that use silage and do not contract silage production, future GRIP net benefits should pass through to silage at about a 90% level. The resulting benefit on a portion (between 30 and 60%) of Alberta backgrounded cattle and an even smaller portion of finished cattle

(20 to 40%) will not be available to B.C. cattlemen regardless of whether they raise or contract their silage. Hence, the playing field in 1992 is likely to be made uneven by GRIP and in Alberta's favour. Depending on grain prices and the net payout of GRIP, Alberta feeders' advantage may be eliminated by 1993 and negative by 1994.

Although BCMAFF could easily level the playing field by including silage harvesting for Peace River barley silage, GRIP is very expensive to administer for small lots of cereal silage along mountain valleys and complex to learn for cattlemen. Also, statistics indicate that limited acreage is harvested in the Peace for this purpose and may limit startup of a program for the Peace. In the view of the consultants, adding silage coverage to GRIP for B.C. would not be the best way to level the playing field.

It is recommended that, in view of Alberta support to silage through GRIP BCMAFF estimate the Alberta benefit (and deficiency if any in 1993 and later) and be prepared to assist producers with a GRIP payment. In 1992, the equivalent benefit should be given to B.C. to cattlemen who feed silage and commit to background or finish by some date (say December 1) in the form of payments calculated per head backgrounded and per head finished. Although the amount should be made public by September 15, 1992 the actual payment could be administered through FII to ensure it went only to those who actually background or finish. Applicants for this aid should have the same requirement as Albertans to contribute premiums and stay with the program for at least three years.

7. *Net Income Stabilization Account (NISA)*

a) *Introduction*

The NISA program was established under the Farm Income Protection Act (FIPA) and was announced by the federal government in January 1991. It was developed by the Grains and Oilseeds Safety Net Committee and includes grains, oilseeds and most special crops as qualifying commodities in its initial year (1990 tax year) plus farm-fed grain. Potentially, all farm produced commodities, including beef, could be negotiated into NISA as a conduit for federal and provincial government funds to reach producers.

The Canadian Cattlemen's Association (CCA) has now reached agreement with the Federal Government that 1990 NISA payments for farm-fed grain by cattlemen will be based on feed coefficients as was originally proposed by Agriculture Canada. What has yet to be finalized is the percentage of cattle sales that can be used. In this regard, the CCA are negotiating for full eligibility for future years.

b) *Description*

NISA is a voluntary farm stabilization program in which individual producers make deposits to an individual Net Income Stabilization Account with governments making matching contributions. The individual producer is entitled to make withdrawals under three circumstances:

- when the current year gross margin for the farm falls below the previous five-year average gross margin, or

- when the individual's net income falls below $10,000 plus the producer's current year matchable deposits, or
- when the farmer retires.

Farmers' contributions will not be tax deductible like an RRSP but will also not be taxable when withdrawn. The government contributions, and accrued interest on funds in the account, will be taxed but only when withdrawn. The farmer will be entitled to make annual matching contributions to the account based on 2% of net sales of eligible agricultural commodities. Net sales are gross sales less purchases of all agricultural commodities including seed, feed and livestock. The federal and provincial governments together will make a matching contribution (all of which the federal government has committed to pay for the 1990 tax year).

For the 1990 tax year, there will also be a federal incentive contribution from the $640 million (Farm Support and Adjustment Measures I) program that will add an additional 1.5%. In Alberta, the province has also opted to pay a 1% provincial contribution which triggers an additional federal bonus for early enrollment of 0.5%. B.C. still has this option open, but the BCMAFF has not yet committed.

Farmers can voluntarily contribute up to an additional 20% of eligible net sales per year with carry forward provisions for five years. However, there additional contributions will not be matched by government. In the first year, interest will be applied to the accounts at 90% of the 90 day Treasury Bill weekly rate. In addition, the federal and provincial governments together will provide an interest bonus of 3% on producer deposits. Interest will be accumulated and transferred to the government tax sheltered side of the account once annually. Compounding is still to be decided. The methodology used to determine the 1990 farm-fed portion of the eligible net sales is based on the quantity of grain and silage fed in each province and by each broad category of animal (e.g., beef cattle) using Statistics Canada domestic animal survey data for grain consumption. The amount of farm fed grain is then estimated and valued using a negotiated coefficient.

Values of grain/silage consumed by beef cattle in B.C. and Alberta in 1990 used for NISA net sale calculations of farm-fed for the 1990 taxation year are listed below.

	Alberta	**B.C.**	**Canada**
Total Feed Consumed	$232,831,000	$11,660,000	
Farm-fed Portion	$138,237,000	$ 2,161,000	$13,300,000

Source: Agriculture Canada, Policy Branch

c) *Implications*

The inclusion of farm-fed grain as an eligible commodity under NISA in 1990 facilitates the indirect distribution of NISA contributions to cattle producers. One should expect at least the same farm-fed contribution for 1991 and depending on GATT negotiations, fuller inclusion of beef cattle by calendar 1993. In Alberta, the farm fed part of NISA amounts to substantial transfers of federal money to cattle producers since many produce at least part of their grain needs. However, in B.C. the amount of grain produced by cattle producers is negligible and results in administrative costs for the BCMAFF that produce marginal additional benefits ($118,855 for producers in present NISA agreement, i.e., total contributions of 5.5% of eligible net sales) to B.C. producers.

The emerging role of NISA is illustrated by the most recent federal initiative for grain producers. On October 10, 1991, federal distribution of the additional $800 million Farm Support and Adjustment Measure (FSAM II) was announced. For the prairie grains sector, an acreage formula will be used as the basis for payments. Yet BCMAFF and producers negotiated use of the NISA database for B.C. to help with administration. Thus, NISA is in effect being used as a conduit for the payment of the $5 million allotted to B.C. (i.e., only those registered for NISA will receive the FSAM II money). FSAM I (the first phase of FSAM including $640 million of incentives for producers to participate in NISA, GRIP premium reductions, cash advances and land use adjustment) and FSAM II coupled with safety net program payments will provide the equivalent of between $30 and $40 per acre ($74.13 and $98.84 per hectare) on average to grains and oilseeds producers across the country.

Any GATT deal may also have implications on the relatively "green" NISA since it is now only paid to grain producers and governments to contribute $2 for each producer dollar. NISA would be more "green" if beef producers were fully included, but the considerable government expense would have to come from somewhere. It has been estimated by BCMAFF that fully including beef in NISA for 1992 would contribute approximately 1.4 to 1.6% to the NTS cap of 8% for B.C. and Alberta. However NISA may contribute more to B.C. beef due to the large cow-calf sector.

d) *Observation and Issues*

Conceptually, NISA enhances the Canadian farmers competitiveness through contribution of government dollars and stabilization of gross farm incomes from all commodities. NISA can also act as a mechanism to teach farmers to systematically put away a portion of earnings during good years rather than re-investing all profits back into illiquid farm assets.

B.C. beef producers miss out on 1.5% for 1990 and 1.01% for 1991 of eligible net sales from the federal government as a result of the B.C. provincial government not yet committing its 1% as Alberta did in November 1991. That is, the federal government was offering to contribute 0.5% of eligible net sales if the provincial government committed its 1.0% contribution now. Otherwise it is not due until 1992. It ends up that in return for this 0.5% bonus, the provincial government puts in 2.0% in the first two years of the program rather than only 0.5% if it had not taken the bonus.

B.C. beef producers may also wish to look closely at NISA as the 1990's substitute for FII.

8. *Forestry Policy on Overwintering*

Forestry policies for overwintering can indirectly result in producers remaining solely in the cow-calf sector. To understand the cause two definitions need to be understood.

First "Appurtenant" lands are the additional lands leased or owned over and above the core lease land (which is the most important). In B.C. Appurtenant lands include:

- private land owned by the tenure holder or applicant
- land leased from the Crown
- land leased from the Federal Government
- Indian reserves
- land under private lease

Secondly, applicants for Crown grazing tenures must be "commensurate" and must maintain full commensurability throughout the term of the tenure. To be "commensurate", forage production capability of appurtenant lands must be sufficient to produce enough forage to feed the livestock authorized under the tenure during periods when Crown forage is not available (usually the winter). This regulation assumes local agronomic management practices on the billable appurtenant lands and current forage production of unimproved appurtenant lands.

According to the existing policy, grazing tenure holders must overwinter a portion of their cattle herd on nearby appurtenant lands or other lands authorized by the district manager. Where the Crown tenure authorizes yearlings, a specified number of calves must be overwintered on these appurtenant lands unless the Forestry District Manager waives the overwintering requirement. The overwintering policy does not apply to herd bulls or calves under six months of age.

a) *Effects*

These policies do not recognize the modern role of transportation. It may be far more economic to transport the forage to the cow, or the cattle to the feed for the period when the tenure is not available. A combination of the overwintering policy and the policy of commensurability results in the value of the Crown Land tenure arrangement being capitalized into the deeded forage land. Policies such as these also place considerable power in the hands of forestry district managers which may result in uncertainty for the lessee as managers change. Since commensurability is measured by the district manager, the lessee may insure his tenure with excess, deeded forage acres. The excess forage acres result in an overall increased cost of production.

In some regions, productive tillable forage land may be in short supply. To remain commensurate producers have put higher cost marginal land into forage production. The alternative to bringing marginal land into production has been a shift to irrigation. In some regions pumping costs are very high and result in a very high overall cost of forage production.

Because of Crown Land arrangements and commensurability, ranchers spend their range improvement budget to upgrade range management systems (deeded and Crown Land), and improvements to deeded land rather than on investments to physically improve Crown range conditions.

These policies favour the cow-calf industry in all areas at the expense of grassland backgrounding because cows are by necessity kept over the winter. The requirement to overwinter a proportion of all the animals going to grass may be so costly that backgrounding on grass or even the cow-calf sector will not be profitable in some regions.

b) *Recommendations*

Phasing out both policies would allow regions of high cost forage to either transport forage in or cattle out for the winter period. Recognizing the natural economic disadvantages for overwintering of each area could result in more grassland backgrounding during the summer and a phasing out of cow-calf completely in some areas.

Although commensurability is sometimes waived by local forestry officials, the uncertainty of a different official requiring commensurability in the future creates some of the cost raising effects. Potential new entrants may not get the requirement waived so the rule can be a barrier to change.

Some argue that commensurability adds stability to the livestock industry, but the same goals might be met through other policies that do not influence the natural economic advantage of an area.

B.C. has the greatest reliance on crown range of anywhere on the continent. Hence this recommended policy change must be implemented in close co-operation with all vested interests (i.e., wildlife, forestry, agriculture, environment and tourism). An integrated resource management approach area by area must be developed.

Education of producers to better utilize Crown range through emphasizing grazing techniques which improve cattle performance in feasible areas, will result in significant economic gains.

9. *Native Land Claims*

The BCCA identifies Native Land Claims as one of the many land uses which are often in direct conflict with the B.C. beef industry's ability to maintain its present size and allow for future expansion. At the same time the industry strongly endorses the concept of multiple use of Crown resources. Thus the concern of the BCCA regarding the planning for Crown resource allocation to meet future land base requirements, in light of the Native Land Claim issue, has led to the following related recommendations by the BCCA:

- The future (next five and tens years) requirements of the industry for Crown range and water should be identified on a regional and provincial basis to be incorporated into land use plans.

- The industry must continue to have representation on planning committees and be actively involved in the decision-making process.

- The industry should continue to participate where possible in the negotiations of Native Land Claims.

Much of B.C.'s ranch land is subject to native land claims. Political scientists identify B.C. as being the closest to its aboriginal past. Historically, B.C. native communities were never subjected to armed conquest, and only a few aboriginal leaders signed treaties with the early European traders and settlers. An uninterrupted 120-year succession of provincial political leaders have refused to acknowledge any aboriginal claim. Until recently, aboriginal peoples in B.C. have trailed far behind others of Canada in dealing with claims to ownership of the land and its resources. They claimed almost the entire province, excluding a northern portion in the Peace River area east of the Rockies and a small area on Vancouver Island. Acknowledging the current uses of the land, they sought ownership only of some lands and resources controlled by the federal and provincial governments. In late 1991, Aboriginal Affairs Minister Andrew Petter of the newly elected government announced that the B.C. government recognizes the political legitimacy of aboriginal title and the inherent right of the native people to self-government.

The implications of such recent events are essentially two-fold. Financial payments will compensate for land and resources now in private hands. This could contribute to higher demands on the provincial governments funds previously intended for other uses affecting the beef industry. Although doubtful, funds required to buyout ranch land from aboriginal negotiators could affect NTS net benefit figures.

In addition, Native Land Claims may add uncertainty to rancher willingness to expand in certain locations and if disputes arise, result in disruptions in production. B.C. courts have shown support for the shift in the government's approach starting in 1985 with injunctions preventing logging in the following years.

The study team agrees with the BCCA recommendations and stress that developments in this area merit a watchful eye and appropriate resources.

10. *Agricultural Land Development Assistance Program (ALDA)*

ALDA is a provincial program established under the Agricultural Credit Act to help farmers further develop agriculture by on-farm capital improvements assisted through long-term, low-interest loans. The loan must range from $5,000 and $75,000. The loan is repayable over a maximum of 15 years. Certain projects can have a shorter repayment term. The interest rate charged is one-half of the average prime bank rate, as determined each April 1st and October 1st and is fixed for the term of the loan when the loan contract is issued.

All applications are assessed on the basis of the project eligibility and the ability of the applicant to service the total farm loan portfolio. Eligibility includes; having legal interest in the land being improved; the land being classified as farm-land; being actively engaged in the day-to-day operation and management of the farm; and, having suitable equipment to develop the land.

The program impacts beef cattle production to a minor extent as the total client-base is only 2,000, and only a portion of these are beef producers. ALDA's main value is in addressing environmental questions such as relocating feedlots, building waste storage facilities or the development of water sources.

11. *Synthesis of Costs and Subsidization*

As mentioned in the net benefits section, that methodology does not identify subsector differences by area or for just backgrounding and finishing. Tables IV-14, IV-15 and IV-16 attempt that analysis. It will lay to rest the last possible arguments that B.C. gets less government help than Alberta. This analysis adds our estimates of cost differences beyond government - as perceived by the rancher or feedlot operator. Then both public and private costs relative to Alberta are summed as one way to clarify over-all competitiveness. Each of the stabilization or major direct subsidies are estimated per head by Canadian region in this study for first finishing, then backgrounding on grain, then backgrounding on grass. Barley prices and quantities assumed in the ration are the same as in prior sections.

The PNW is left out as no comparable detailed net benefits study was available to estimate the considerable indirect subsidy effects on American livestock, especially in grain and infrastructure assistance. Such "other" subsidies range from $14.16 per head in B.C. to $15.98 in Alberta in 1990 but are unknown in the U.S. and their estimation was outside the scope of this work. NTS is included but is the same for all regions so makes no impact on the relative Canadian comparisons.

Table IV-14 shows the finishing sector subsidies total $35.59 per head in the Peace River up to $49.41 in the Cariboo compared to $22.47 in Alberta. Therefore provincial and federal government assistance is $13.11 to $26.94 per head higher in B.C. than Alberta, essentially because of FII. The Cariboo region is the highest, followed by Bulkley at $21.56 per head due to the relatively high feed freight assistance in these areas.

Table IV – 14: Beef Feedlot Finishing: Subsidization and Costs Per Head – 1990

Assumptions*	Units	Alberta	Region 1 Fraser	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace
Selling Weight	lbs	1129	1129	1129	1129	1129	1129	1129
Selling Price	$/cwt	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50
Cash Receipt	$/head	$863.69	$863.69	$863.69	$863.69	$863.69	$863.69	$863.69
Barley fed/head	Tonnes	0.854	0.597	0.768	0.768	0.768	0.768	0.853
SUBSIDIES								
FII net payment **	$/head		$23.76	$23.76	$23.76	$23.76	$23.76	$23.76
NTS net payment ***	$/head	($2.04)	($2.04)	($2.04)	($2.04)	($2.04)	($2.04)	($2.04)
NTS admin. fee	$/head		($0.30)	($0.30)	($0.30)	($0.30)	($0.30)	($0.30)
FFA	$/tonne		$11.50	$8.00	$4.50	$18.00	$11.00	
	$/head		$6.87	$6.15	$3.46	$13.83	$8.45	
CBO	$/tonne	$10.00						
	$/head	$8.54						
Other	$/$100 ACR	1.85	1.64	1.64	1.64	1.64	1.64	1.64
	$/head	$15.98	$14.16	$14.16	$14.16	$14.16	$14.16	$14.16
TOTAL SUBSIDIES	$/head	$22.47	$42.46	$41.73	$39.04	$49.41	$44.04	$35.59
SUBSIDIES RELATIVE TO ALBERTA		0	$19.99	$19.26	$16.57	$26.94	$21.56	$13.11
COST DIFFERENCES RELATIVE TO ALBERTA								
Producer's ****	$/head	0	$28.54	$41.35	$36.30	$25.32	$21.09	$30.21
Producer's + Govt's	$/head	0	$48.53	$60.61	$52.87	$52.26	$42.65	$43.32

FOOTNOTES:

* Calculated from SCI tables 1 & 2.

** Payment per head is minus producer advance ($3.50/head) and discount premiums (calculated/head) and administration fee ($0.75/head). Average of all months payouts in 1990 (since #head triggering payouts is relatively constant, i.e. approx. 13,000 hd in Q1, 15,000 hd in Q2, 11,000 hd in Q3, and 8,000 hd in Q4, and since not consistant in relative proportion in 1991 thus far).

*** Payment per head is minus producer premium ($8.10/head). The payment is an average weighted by the volume of sales within each quarter of 1990. If the same calculation was done using another year's data the result may have been quite different (e.g. $85.59 weighted average payout for 1989 – $7.86 weighted premium for 1989 ($7.40/head for the 1st quarter and $8.10 for the 2nd to 4th quarters of 1989) = $77.73 net average payout for 1989).

**** Total producer and handling costs brought forward from Table III–16.

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Table IV – 15: Beef Feedlot Backgrounding (Grain Only): Subsidization and Costs Per Head – 1990

Assumptions	Units	Alberta	Region 1 Fraser	Region 2 S. Int.	Region 3 Kootenays	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace
Feeding period	days	171	171	171	171	171	171	171
Selling Weight	lbs	800	800	800	800	800	800	800
Selling Price	$/cwt	$87.50	$87.50	$87.50	$87.50	$87.50	$87.50	$87.50
Cash Receipt	$/head	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00
Barley fed/head *	Tonnes	0.388	0.388	0.388	0.388	0.388	0.388	0.388
SUBSIDIES								
FII net payment **	$/head		$6.54	$6.54	$6.54	$6.54	$6.54	$6.54
NTS net payment ***	$/head	($1.29)	($1.79)	($1.29)	($1.29)	($1.29)	($1.29)	($1.29)
NTS admin. fee	$/head		($0.30)	($0.30)	($0.30)	($0.30)	($0.30)	($0.30)
FFA	$/tonne		$11.50	$8.00	$4.50	$18.00	$11.00	
	$/head		$4.46	$3.11	$1.75	$6.99	$4.27	
CBO	$/tonne	$10.00						
	$/head	$3.88						
Other	$/$100 ACR	1.85	1.64	1.64	1.64	1.64	1.64	1.64
	$/head	$12.95	$11.48	$11.48	$11.48	$11.48	$11.48	$11.48
TOTAL SUBSIDIES	$/head	$15.55	$20.90	$19.54	$18.18	$23.42	$20.70	$16.43
SUBSIDIES RELATIVE TO ALBERTA		0	$5.35	$3.99	$2.64	$7.88	$5.16	$0.89
COST DIFFERENCES RELATIVE TO ALBERTA								
Producer's ****	$/head	0	$48.80	$39.87	$34.42	$12.21	$7.66	($5.62)
Producer's + Govt's	$/head	0	$54.15	$43.88	$37.02	$20.09	$12.82	($4.73)

FOOTNOTES:

* Calculated from SCI assumed days on feed, lbs consumed/day and converted to metric tonnes.

** **Payment per head** is minus **producer advance** ($3.50/head) and discount premiums (calculated/head) and administration fee ($0.75/head). Average of all months payouts in 1990 (since the number of head triggering payouts is relatively constant, i.e. approx. 13,000 hd in Q1, 15,000 hd in Q2, 11,000 hd in Q3, and 8,000 hd in Q4, and since not consistant in relative proportion in 1991 thus far).

*** **Payment per head is minus a weighted average** of the producer premiums ($4.85/head from the 1st to the 3rd quarters of 1990 and $5.50 in the 4th quarter). The **payment is an average weighted by the volume of sales within each quarter of 1990.** If the same calculation **was** done using another **year's data the result may have been quite different (e.g. $16.15 weighted average payout for 1989 - $4.85** premium for 1989 = $11.30 net average payout for 1989).

**** Brought forward from Table III-11; **Total Producer** and handling costs per head.

Table IV – 16: Beef Feedlot Backgrounding (Grass Only): Subsidization and Costs Per Head – 1990

Assumptions	Units	Alberta	Region 1 Fraser	Region 2 S. Int.	Region 3 Kootenays	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace
Feeding period	days	120	120	120	120	120	120	120
Selling Weight	lbs	900	900	900	900	900	900	900
Selling Price	$/cwt	$80.00	$80.00	$80.00	$80.00	$80.00	$80.00	$80.00
Cash Receipt	$/head	$720.00	$720.00	$720.00	$720.00	$720.00	$720.00	$720.00
Barley fed/head *	Tonnes	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SUBSIDIES								
FII net payment **	$/head		$6.54	$6.54	$6.54	$6.54	$6.54	$6.54
NTS net payment ***	$/head	($1.29)	($1.29)	($1.29)	($1.29)	($1.29)	($1.29)	($1.29)
NTS admin. fee	$/head		($0.30)	($0.30)	($0.30)	($0.30)	($0.30)	($0.30)
FFA	$/tonne		$11.50	$8.00	$4.50	$18.00	$11.00	
	$/head		$0.00	$0.00	$0.00	$0.00	$0.00	
CBO	$/tonne	$10.00						
	$/head	$0.00						
Other	$/$100 ACR	1.85	1.64	1.64	1.64	1.64	1.64	1.64
	$/head	$13.32	$11.81	$11.81	$11.81	$11.81	$11.81	$11.81
TOTAL SUBSIDIES	$/head	$12.03	$16.76	$16.76	$16.76	$16.76	$16.76	$16.76
SUBSIDIES RELATIVE TO ALBERTA		0	$4.73	$4.73	$4.73	$4.73	$4.73	$4.73
COST DIFFERENCES RELATIVE TO ALBERTA								
Producer's ****	$/head	0	$35.61	$3.56	$7.62	($4.06)	$0.00	($16.25)
Producer's + Govt's	$/head	0	$40.34	$8.29	$12.35	$0.67	$4.73	($11.52)

FOOTNOTES

* Calculated from SCI assumed days on feed, lbs consumed/day and converted to metric tonnes

** Payment per head is minus producer advance ($3.50/head) and discount premiums (calculated/head) and administration fee ($0.75/head). Average of all months payouts in 1990 (since the number of head triggering payouts is relatively constant, i.e. approx. 13,000 hd in Q1, 15,000 hd in Q2, 11,000 hd in Q3, and 8,000 hd in Q4, and since not consistant in relative proportion in 1991 thus far).

*** Payment per head is minus a weighted average of the producer premiums ($4.85/head from the 1st to the 3rd quarters of 1990 and $5.50 in the 4th quarter). The payment is an average weighted by the volume of sales within each quarter of 1990. If the same calculation was done using another year's data the result may have been quite different (e.g. $16.15 weighted average payout for 1989 – $4.85 premium for 1989 = $11.30 net average payout for 1989).

**** Brought forward from Table III–13; Total Producer and handling costs per head.

For a complete picture of competitiveness, the privately incurred costs need to be added to these levels of government support. Analyses performed earlier in the study was transferred to this table so private cost differences for finishing can be compared to Alberta. It ranges from $21.09 per head more than Alberta in Bulkley to $41.35 more than Alberta in the Southern Interior. When combined with the subsidy levels, the Bulkley and Peace areas are by far the most competitive in B.C. -- at approximately $42.65 to $46.32 per head more than Alberta when combining both government and private costs. Regions 1, 4, 3, and 2 are increasingly costly for both private and public expenditure; the Southern Interior is the most costly for finishing at $60.61 per head in 1990.

For the backgrounding comparison (Tables IV-15 and IV-16), the team tried to evaluate significant value-adding from 500-900 lbs. (227-408 kg) before resale and to include a second step, back from feedlots to low cost grass (shown in Table IV-16 for all regions but most applicable for regions 2, 3, and 4, where winters are shorter). While the 1.75 lb./day (.79 kg/day) gain behind this table may be low, it was assumed for all locations so the relative error would be small.

Table IV-15 shows the backgrounding (on grain) sector subsidies total $16.43 to $23.42 per head in B.C. and $15.55 in Alberta. Subsidies are relatively closer to Alberta for backgrounding on grain -- only costing $0.89 more in the Peace up to $7.88 more in the Cariboo. As in the finishing analysis, producer perceived costs are next added, as increments above Alberta. When added to the subsidies, most B.C. costs to backgrounding on grain are higher than Alberta. For example, the Fraser Valley is $54.15 more than Alberta. Yet the Peace is lower than Alberta by $4.73 per head. The Southern Interior and Cariboo where much of the backgrounding historically was located, have costs of $43.88 and $20.09 respectively more than Alberta. When grassing is utilized, (Table IV-16) all B.C. regions become more competitive with Alberta, yet grassing is not feasible in all areas. The Southern Interior gains the most competitively within the province when grassing is utilized, while the Cariboo becomes competitive with Alberta.

In summary, both backgrounding and finishing in B.C. are more expensive to ranchers and taxpayers than in Alberta, with one exception. The Peace area is by far the most competitive region for backgrounding, followed by Bulkley and the Cariboo if backgrounding is grain based, while the Cariboo is second to the Peace, if grass is utilized in the Cariboo.

Development policies must decide how to adjust to this competitive reality.

12. *Future Scenarios for Provincial Government Programs*

The change to a new government in B.C. in October 1991 may herald some changes to the provincial agricultural policy environment. Yet national and international events in grain and beef may truly set the direction of provincial policy. This section will overview possible scenarios and suggest potential directions for change in programs key to the beef industry.

Three scenarios seem apparent. First is the 1992 "Base Case" incorporating the change to a new B.C. government and implementation of suggestions made in this report. By mid 1992 the NTS reviews underway are made public, with possible minor changes recommended, but the NTS system stays intact until the 1995 completion of existing agreements.

The second scenario includes the "Base case" plus a GATT agreement by early 1992 which results in the federal government embarking on realization of its international commitments to lower export and internal subsidies by 35%. It is believed that this means changes to historic grain export rates and changes to pooling policies of the Wheat Board (resulting in a $7 per tonne lower barley price to B.C. producers). Such transportation changes could lead to removal of Feed Freight Assistance and some provincial support mechanisms like FII.

Scenario three includes implementation of the "Base case" plus a countervail action from the United States under the Canadian - U.S. Trade Agreement as a result of large NTS payments during late 1991 and early 1992. Such a countervail action by American cattlemen may arise by late 1992 regardless of GATT, given the reoccurrence of hog countervail actions (also partly due to NTS).

Each scenario will be discussed and possible beef industry strategies to deal with each suggested. The "Base Case" with its implications is documented elsewhere in this report.

Under scenario #2, one large outcome of a GATT agreement is the probable necessity to change the subsidized "Crow Rate" and the method of paying the Crow Benefit so that it is more commodity neutral. While this issue is to be seriously debated at federal/provincial farm level consultations in early 1992, phasing out of the Crow Benefit is very likely giving the Prairie producers hesitancy to accept any of the proposed "method of payment" options. However, an early 1992 GATT agreement may accelerate acceptance of Crow change and should create a grain producer push for offsetting compensation similar to what European farmers will demand.

In these scenario subsets, FFA will perhaps be solved the same way as Crow -- phased out, bought out, or replaced with more commodity neutral support. To partially evaluate this possibility, the consultants discussed the step by step logic with the subsidy advisory committee and summarize it here. Table IV-17 shows a comparison of the simple effects on cost of barley if programs like Crow, CBO, FFA, and the current form of CWB pooling were discontinued (no second round or adjustment effects are measured).

Line 1 is the visible barley price difference to finishing lots used elsewhere in the study. Line 2 introduces the $16 Crow increase less $4 transportation efficiency for a net drop in barley prices of $12 in most regions of B.C. Line 4 introduces the effect of CWB pooling, increasing barley prices. The unrelated but feared loss of FFA would have the significant effects shown on line 6 resulting in price relationships set out on line 7. (No allowance was made for a buy out of FFA that would be as likely as any Crow buy out.) Then the prices relative to Alberta are rebased in line 8. Line #9 compares this rebased price relationship to the original.

B.C. regions are less affected than Alberta by the complete shift in transportation policies as shown in the last two lines. Regions 1, 2, and 5 expensive prices that are $2.00 per tonne different, relative to Alberta, after loss of FFA. The Kootenay's are $5.50 better off than currently due to the large Crow drop and small FFA loss. The Peace livestock producer is much better off, realizing about $9 per tonne lower cost feed. The Cariboo is worse off by $8. This situation arises in the Cariboo because of the unusually high FFA of $18 that is currently received. However, this is under review and may be lowered irregardless of other changes. The PNW's barley price would decrease by $3 per tonne but is still the highest price of the eight regions compared in the study. Finally, the second to last line suggests that regions #5 and #6 still have the lowest cost barley for feeding, when compared to Alberta.

Under scenario #3, a countervail would be very difficult for B.C. in view of the importance of the Pasco market to some, and the potential drop in Canadian prices as a result of the American trade action. Beef industry leaders would be drawn into a protracted period of lobbying and will be called on to help guide government on which programs should change. The likely American concern will begin with NTS but move to other subsidies like CBO, FII, and FFA. Leaders should give some thought to this eventuality and he prepared to react quickly in the event of a countervail.

Table IV – 17: Relative Regional Barley Cost Effects of Discontinuing FFA, CROW Subsidy, CBO, & Changed CWB Pooling

		Alberta (Base=0)	Region 1 Fraser Valley	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace River	PNW
	Current relationship of finisher's								
1	Barley market prices	$0.00	$20.00	$18.75	$5.00	$0.00	($14.00)	($12.00)	$39.50
	Effect of ceasing Crow subsidy, Crow benefit offset, & transportation efficiency								
2	Barley change	($2.00)	($12.00)	($12.00)	($12.00)	($12.00)	($12.00)	($11.00) *	
3	Est. barley price	($2.00)	$8.00	$6.75	($7.00)	($12.00)	($26.00)	($23.00)	$39.50
	Effect of changing CWB price pooling (& above scenario ceasing Crow subsidy)								
4	Barley change	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	$5.00	
5	Est. barley price	$3.00	$13.00	$11.75	($2.00)	($7.00)	($21.00)	($18.00)	$39.50
	Effect of losing FFA without compensation (& above scenarios)								
6	FFA lost, price change	$0.00	$11.50	$8.00	$4.50	$18.00	$11.00	$0.00	
7	Est. barley price	$3.00	$24.50	$19.75	$2.50	$11.00	($10.00)	($18.00)	$39.50
	"Worst Case" change from current "base" (line 1)								
8	With Alta = 0 **	$0.00	$21.50	$16.75	($0.50)	$8.00	($13.00)	($21.00)	$36.50
9	Barley change	$0.00	$1.50	($2.00)	($5.50)	$8.00	$1.00	($9.00)	($3.00)

FOOTNOTES:

Line #1 barley data from Canadian Livestock Feed board, used in earlier tables

Line #5 = #2 + #4, line #7 = #5 + #6, line #8 = #7 rebased, and line #9 = #8 – #1

( ) means decrease, i.e. an advantage to cattle feeders relative to Alberta

* change at Dawson Creek is about $1.00 per tonne less than central Alberta

** using line 7

APPENDIX A

CATTLE SLAUGHTER SUMMARY

CATTLE INVENTORY BY CLASS

AND

BEEF SUPPLY AND UTILIZATION BALANCE SHEET FOR U.S. AND CANADA

APPENDIX A

As mentioned in the text (page 104) the Canadian supply management program for broilers tends to keep prices of broilers high and consumption low relative to the U.S. In turn it keeps Canadian per capita consumption of beef higher than it would be if broilers were priced basis U.S. Georgia dock.

SCI has developed, as a part of its routine forecasting and outlook work, an econometric model that is used regularly to forecast the meat consumption outlook for each class of meat. This model incorporates the usual historical supply/demand information, macro-economic variables, and elasticities of consumption important to making a forecast. SCI prepares these forecasts for U.S. and Canada on a regular basis. This model was used to project the consumption outlook for meat set out in Figures III-12 and III-13 in the text.

Set out in this appendix are the data and results of the "base case" scenario and the "supply management removal" scenario. Tables A1 to A3 set forth the forecast results of the "base case" scenario for the U.S. and Canada (Tables A4 to A6). Tables A7 to A9 set forth the forecast results for Canada under the "supply management removal" scenario.

To analyze the impact of supply removal, Tables A4 to A6 (Canada "base case") need to be compared to Tables A7 to A9 (Canada supply management removal). For example, Table A4 (base case) sets out an estimate of total cattle slaughtered in column 6 (3.699 million head in 1996). Under the supply management scenario it is estimated that total cattle slaughtered will drop to 3.376 million head in 1996 (Table A7, Column 6). To facilitate this review Tables A10 and A11 have been prepared to summarize the differences between each scenario.

Impacts on Canadian poultry trade of supply management removal are summarized in Table A10. It shows that Canadian broiler production in 1996 would decline from 590,000 tonnes to 468,000 tonnes, but imports would rise from restricted levels of 40,000 tonnes to unrestricted levels of 372,000 tonnes. In other words total broiler meat available for consumption would be 840,000 tonnes vs 630,000 tonnes. This in turn pushes per capita consumption of broiler meat up.

Impacts on the cattle sector of supply management removal are set out in Table A11. It shows that Canada cattle slaughter declines from 3.699 million to 3.376 million in 1996. It shows that exports of slaughter cattle rise from 249,000 head to 485,000 head. It further shows that Toronto steer prices decline from $95.71 to $89.71/cwt. (211.00 to 197.77 cents/kg).

Appendix A1: Cattle Slaughter Summary

YEAR	Federal Inspected Slaughter					Dress Weights					
	STEERS	HEIFERS	COWS	BULLS	CATTLE	STEER	HEIFER	COW	BULL	CATTLE	BEEF PRODUCTION Federal Inspected
	THOUSAND HEAD					POUNDS					MIL LBS
1970	16,608	8,304	5,373	507	30,792	683	573	511	708	622	19,152
1971	17,003	8,229	5,627	560	31,419	679	567	510	711	617	19,375
1972	17,749	8,535	5,402	583	32,269	683	579	519	729	627	20,240
1973	16,604	7,645	5,659	613	30,521	691	588	515	749	632	19,295
1974	17,824	7,962	6,794	741	33,321	700	587	494	704	629	20,937
1975	16,070	9,420	10,421	996	36,907	672	557	477	684	587	21,628
1976	17,265	11,117	9,704	906	38,992	687	580	487	693	608	23,723
1977	17,892	10,865	9,129	834	38,720	683	579	473	689	604	23,365
1978	17,307	10,981	7,912	745	36,945	684	584	489	723	613	22,623
1979	16,257	9,113	5,546	588	31,504	699	597	519	742	637	20,059
1980	16,061	8,981	5,925	678	31,645	708	605	514	751	641	20,275
1981	16,438	9,416	6,237	728	32,819	709	609	513	753	641	21,042
1982	16,344	9,833	6,955	774	33,906	698	603	508	751	629	21,334
1983	16,614	10,221	7,215	768	34,818	702	611	509	751	634	22,058
1984	16,689	10,211	8,228	753	35,881	700	615	496	763	627	22,508
1985	16,200	10,764	7,075	726	34,765	726	641	509	778	653	22,709
1986	16,870	10,688	7,665	689	35,912	722	642	519	790	653	23,456
1987	16,868	10,546	6,392	666	34,472	718	648	529	810	661	22,773
1988	16,834	10,438	6,146	624	34,042	729	656	538	836	671	22,835
1989	16,095	10,129	6,146	641	33,011	742	670	540	858	680	22,457
1990	16,160	9,833	5,764	630	32,387	741	672	539	847	684	22,152
FORECAST											
1991	16,029	9,837	5,532	627	32,026	750	684	551	870	694	22,216
1992	16,956	10,190	5,295	631	33,072	746	684	554	868	695	22,979
1993	16,718	10,577	6,221	678	34,194	750	692	550	879	694	23,742
1994	17,114	10,808	6,513	694	35,129	754	699	551	890	698	24,526
1995	17,264	10,921	6,573	696	35,455	759	706	554	901	703	24,920
1996	17,110	10,938	6,560	694	35,302	763	713	557	912	708	24,978

Source: Sparks Companies, Inc.

Appendix A2: Total Cattle Inventory

	— YEAR —												
Reported USDA	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
	— THOUSAND HEAD —												
January 1 Inventory	115,001	113,360	109,582	105,378	102,118	99,622	98,065	98,162	99,436	101,479	103,675	105,157	105,060
Less													
Cattle Slaughter	37,892	36,593	37,568	35,890	35,324	34,106	33,405	33,060	34,259	35,533	36,742	37,111	36,828
Calf Slaughter	3,367	3,455	3,478	2,902	2,565	2,223	1,840	1,710	1,782	2,107	2,263	2,287	2,214
Cattle Deaths	1,873	1,701	1,718	1,700	1,655	1,537	1,566	1,600	1,500	1,500	1,500	1,400	1,400
Calf Deaths	3,591	3,345	3,280	3,100	2,995	2,934	2,834	2,900	2,900	2,900	2,900	2,800	2,800
Add													
Calf Crop	42,470	41,050	41,182	40,152	40,293	40,102	39,879	40,637	41,603	42,198	42,311	42,219	42,049
Foreign Trade													
Imports (add)	753	836	1,407	1,200	1,332	1,459	2,135	1,647	1,400	1,468	1,267	1,205	970
Exports (subtract)	71	125	108	131	321	169	120	225	250	200	200	150	150
Net Foreign Trade	682	711	1,299	1,069	1,011	1,290	2,015	1,422	1,150	1,268	1,067	1,055	820
Estimated Inventory	113,360	109,582	105,378	102,118	99,622	98,065	98,162	99,436	101,479	103,675	105,157	105,060	104,715
Residual	(278)	(996)	195	(256)	(643)	(664)	(1,095)	(866)	(255)	(114)	(224)	(135)	(154)

Source: Sparks Companies, Inc.

Appendix A3: Beef Supply and Utilization

							DOMESTIC DISAPPEARANCE			OMAHA STEER PRICE	
YEAR	BEGINNING INVENTORY	IMPORTS	PRODUCTION	TOTAL SUPPLY	EXPORTS	ENDING INVENTORY		PER CAPITA	PERCENT CHANGE		PERCENT CHANGE
	MILLION POUNDS							POUNDS	PCT	$/CWT.	PCT
1972	366	1,996	22,218	24,580	62	367	24,151	86.1	10.0%	35.78	10.5%
1973	367	2,020	21,089	23,476	91	448	22,937	81.0	-6.0%	44.54	24.5%
1974	448	1,645	22,843	24,936	63	402	24,471	85.5	5.6%	41.89	-6.0%
1975	402	1,782	23,672	25,856	53	350	25,453	88.1	3.0%	44.49	6.2%
1976	350	2,014	25,667	28,031	90	464	27,477	94.1	6.9%	39.11	-12.1%
1977	464	1,962	24,986	27,412	103	316	26,994	91.6	-2.7%	40.38	3.3%
1978	316	2,322	24,009	26,647	163	405	26,079	87.5	-4.4%	52.34	29.6%
1979	405	2,375	21,262	24,042	170	350	23,522	78.0	-10.8%	67.67	29.3%
1980	350	2,084	21,469	23,903	176	328	23,399	76.8	-1.7%	66.96	-1.0%
1980	350	2,084	21,469	23,903	176	328	23,399	76.8	-1.7%	66.96	-1.0%
1981	328	1,758	22,214	24,300	221	257	23,822	77.3	0.7%	63.84	-4.7%
1982	257	1,952	22,366	24,575	253	294	24,028	77.2	-0.2%	64.22	0.6%
1983	294	1,931	23,060	25,285	272	325	24,688	78.5	1.8%	62.52	-2.7%
1984	325	1,823	23,418	25,566	329	358	24,880	78.4	-0.2%	65.34	4.5%
1985	358	2,068	23,557	25,983	328	317	25,337	79.1	0.9%	58.37	-10.7%
1986	317	2,101	24,213	26,631	508	311	25,813	78.7	-0.5%	57.74	-1.1%
1987	311	2,169	23,407	25,887	604	289	24,994	73.4	-6.7%	64.61	11.9%
1988	289	2,379	23,422	26,090	680	317	25,092	72.5	-1.3%	69.54	7.6%
1989	317	2,175	22,976	25,469	1,067	252	24,150	69.0	-4.7%	72.52	4.3%
1990	252	2,354	22,634	25,240	1,006	300	23,933	67.7	-1.9%	77.40	6.7%
FORECAST											
1991	300	2,385	22,735	25,421	1,152	300	23,969	67.1	-0.9%	74.97	-3.1%
1992	300	2,388	23,583	26,271	1,155	300	24,816	68.9	2.7%	74.51	-0.6%
1993	300	2,366	24,427	27,093	1,200	300	25,593	70.5	2.3%	71.36	-4.2%
1994	300	2,348	25,383	28,031	1,400	300	26,331	72.0	2.1%	69.15	-3.1%
1995	300	2,342	25,814	28,456	1,450	300	26,706	72.4	0.6%	70.62	2.1%
1996	300	2,341	25,804	28,445	1,450	300	26,695	71.9	-0.8%	74.00	4.8%

Source: Sparks Companies, Inc.

Appendix A4: Canadian Cattle Supplies

	FEDERAL INSPECTED CATTLE SLAUGHTER									STEER PRICE	
YEAR	STEERS	HEIFERS	COWS	BULLS	ALL CATTLE	TOTAL CATTLE SLAUGHTER	CATTLE DRESSED WEIGHTS	SLAUGHTER CATTLE IMPORTS	SLAUGHTER CATTLE EXPORTS	TORONTO	CALGARY FEEDER
	— THOUSAND HEAD —						KG/HEAD	(000)	(000)	$/LB.	$/LB.
1980	1,491	913	624	58	3,086	3,526	266	23	210	80.74	74.59
1981	1,619	915	604	58	3,197	3,691	265	80	185	80.00	73.93
1982	1,566	967	704	57	3,294	3,788	260	72	317	80.54	73.08
1983	1,539	946	712	45	3,242	3,709	268	78	266	78.98	71.54
1984	1,437	886	746	47	3,116	3,566	266	30	294	85.30	75.53
1985	1,418	883	812	46	3,159	3,603	273	52	335	81.63	74.18
1986	1,458	886	727	47	3,118	3,530	281	61	221	82.66	72.22
1987	1,417	772	648	42	2,879	3,263	286	74	234	88.89	81.60
1988	1,386	770	580	38	2,774	3,157	294	38	465	87.35	79.00
1989	1,389	737	652	41	2,819	3,197	291	43	456	88.82	80.58
1990	1,322	696	539	31	2,587	2,953	297	14	845	88.89	94.09
FORECAST											
1991	1,263	656	586	42	2,547	2,889	298	14	602	89.14	93.81
1992	1,415	614	561	30	2,619	2,975	309	15	684	82.99	89.15
1993	1,392	666	658	30	2,747	3,124	306	9	742	84.59	90.42
1994	1,416	711	662	33	2,821	3,210	308	16	679	85.81	91.36
1995	1,443	731	665	35	2,875	3,273	311	21	632	87.77	92.88
1996	1,461	792	667	42	2,963	3,376	312	19	485	89.68	94.35

Source: Sparks Companies Inc.

Appendix A5: Canadian Cattle Inventories (December 31st)

	Beef Cows	Milk Cows	Beef Heifers	Dairy Heifers	Steers	Bulls	Calves	All Cattle
				— THOUSAND HEAD —				
1980	3,467	1,764	1,075	701	1,309	204	3,646	12,166
1981	3,498	1,780	1,070	706	1,275	206	3,628	12,163
1982	3,430	1,736	1,017	686	1,181	200	3,610	11,861
1983	3,376	1,679	985	670	1,128	197	3,595	11,629
1984	3,282	1,618	976	663	1,097	193	3,500	11,330
1985	3,180	1,547	951	648	1,023	186	3,421	10,956
1986	3,191	1,486	956	635	965	189	3,380	10,802
1987	3,276	1,467	941	634	893	199	3,454	10,863
1988	3,368	1,449	979	633	874	207	3,508	11,016
1989	3,476	1,429	1,014	627	876	208	3,517	11,146
1990	3,561	1,410	1,007	620	840	210	3,550	11,198
FORECAST								
1991	3,550	1,400	1,028	620	1,080	209	3,550	11,437
1992	3,575	1,400	1,019	620	978	221	3,574	11,388
1993	3,585	1,400	1,009	620	1,026	222	3,579	11,441
1994	3,595	1,400	1,007	620	1,085	222	3,583	11,512
1995	3,600	1,400	1,005	620	1,128	223	3,585	11,561
1996	3,604	1,400	1,004	620	1,243	223	3,587	11,681

Source: Sparks Companies, Inc.

Appendix A6: Canadian Beef Supply and Usage

YEAR	BEGINNING COLD STORAGE	PRODUCTION	IMPORTS	EXPORTS	ENDING COLD STORAGE	DOMESTIC DISAPPEARANCE		TORONTO STEER PRICE
							PER CAPITA	
	-MILLION POUNDS-						LB/PERSON	$/CWT
1980	59	2,070	173	143	60	2,098	64.5	80.74
1981	60	2,156	174	175	35	2,182	66.3	80.00
1982	35	2,175	191	182	29	2,189	66.0	80.54
1983	29	2,189	201	182	39	2,198	65.7	78.98
1984	39	2,091	254	230	35	2,119	62.9	85.30
1985	35	2,172	253	257	39	2,164	63.7	81.63
1986	39	2,184	243	226	29	2,210	63.6	82.66
1987	29	2,056	296	196	26	2,159	59.8	88.89
1988	26	2,045	343	182	37	2,195	59.7	87.35
1989	37	2,053	350	229	36	2,174	54.7	88.82
1990	36	1,931	408	231	35	2,109	52.5	88.89
1991	35	1,897	412	217	35	2,092	51.6	88.69
1992	35	2,024	415	268	35	2,172	53.0	88.60
1993	35	2,104	425	271	35	2,259	54.5	90.56
1994	35	2,177	471	275	35	2,373	56.7	92.32
1995	35	2,241	482	277	35	2,446	57.9	94.13
1996	35	2,321	482	279	35	2,524	59.1	95.71

Source: Sparks Companies, Inc.

Appendix A7: Canadian Cattle Supplies

	Federal Inspected Slaughter									— STEER PRICE —	
YEAR	STEERS	HEIFERS	COWS	BULLS	ALL CATTLE	TOTAL CATTLE SLAUGHTER	CATTLE DRESSED WEIGHTS	SLAUGHTER CATTLE IMPORTS	SLAUGHTER CATTLE EXPORTS	TORONTO	CALGARY FEEDER
	— THOUSAND HEAD —						KG/HEAD	(000)	(000)	$/LB.	$/LB.
1980	1,491	913	624	58	3,086	3,526	266	23	210	80.74	74.59
1981	1,619	915	604	58	3,197	3,691	265	80	185	80.00	73.93
1982	1,566	967	704	57	3,294	3,788	260	72	317	80.54	73.08
1983	1,539	946	712	45	3,242	3,709	268	78	266	78.98	71.54
1984	1,437	886	746	47	3,116	3,566	266	30	294	85.30	75.53
1985	1,418	883	812	46	3,159	3,603	273	52	335	81.63	74.18
1986	1,458	886	727	47	3,118	3,530	281	61	221	82.66	72.22
1987	1,417	772	648	42	2,879	3,263	286	74	234	88.89	81.60
1988	1,386	770	580	38	2,774	3,157	294	38	465	87.35	79.00
1989	1,389	737	652	41	2,819	3,197	291	43	456	88.82	80.58
1990	1,322	696	539	31	2,587	2,953	297	14	845	88.89	94.09
FORECAST											
1991	1,263	656	586	42	2,546	2,889	298	14	602	88.69	93.45
1992	1,410	798	583	47	2,838	3,231	301	34	459	88.60	93.49
1993	1,484	833	648	47	3,013	3,434	303	29	499	90.56	95.04
1994	1,500	888	639	53	3,079	3,511	305	42	392	92.32	96.40
1995	1,544	903	644	55	3,147	3,590	309	44	367	94.13	97.79
1996	1,575	959	644	62	3,240	3,699	311	58	249	95.71	99.02

Source: Sparks Companies, Inc.

Appendix A8: Canadian Cattle Inventories

Year	Beef Cows	Milk Cows	Beef Heifers	Dairy Heifers	Steers	Bulls	Calves	All Cattle
				-- THOUSAND HEAD --				
1980	3,467	1,764	1,075	701	1,309	204	3,646	12,166
1981	3,498	1,780	1,070	706	1,275	206	3,628	12,163
1982	3,430	1,736	1,017	686	1,181	200	3,610	11,861
1983	3,376	1,679	985	670	1,128	197	3,595	11,629
1984	3,282	1,618	976	663	1,097	193	3,500	11,330
1985	3,180	1,547	951	648	1,023	186	3,421	10,956
1986	3,191	1,486	956	635	965	189	3,380	10,802
1987	3,276	1,467	941	634	893	199	3,454	10,863
1988	3,368	1,449	979	633	874	207	3,508	11,016
1989	3,476	1,429	1,014	627	876	208	3,517	11,146
1990	3,561	1,410	1,007	620	840	210	3,550	11,198
FORECAST								
1991	3,550	1,400	1,028	620	1,080	209	3,550	11,437
1992	3,599	1,400	1,019	620	1,173	211	3,573	11,595
1993	3,619	1,400	1,026	620	1,198	212	3,582	11,658
1994	3,655	1,400	1,027	620	1,299	214	3,598	11,814
1995	3,685	1,400	1,031	620	1,358	216	3,612	11,922
1996	3,718	1,400	1,034	620	1,479	218	3,627	12,096

Source: Sparks Companies, Inc.

Appendix A9: Canadian Beef Supply and Usage

YEAR	BEGINNING COLD STORAGE	PRODUCTION	IMPORTS	EXPORTS	ENDING COLD STORAGE	— DOMESTIC DISAPPEARANCE —		TORONTO STEER PRICE
						TOTAL	PER CAPITA	
			— MILLION POUNDS —				LB/PERSON	$/CWT
1980	59	2,070	173	143	60	2,098	64.5	80.74
1981	60	2,156	174	175	35	2,182	66.3	80.00
1982	35	2,175	191	182	29	2,189	66.0	80.54
1983	29	2,189	201	182	39	2,198	65.7	78.98
1984	39	2,091	254	230	35	2,119	62.9	85.30
1985	35	2,172	253	257	39	2,164	63.7	81.63
1986	39	2,184	243	226	29	2,210	63.6	82.66
1987	29	2,056	296	196	26	2,159	59.8	88.89
1988	26	2,045	343	182	37	2,195	59.7	87.35
1989	37	2,053	350	229	36	2,174	54.7	88.82
1990	36	1,931	408	231	35	2,109	52.5	88.89
1991	35	1,897	412	217	35	2,092	51.6	88.69
1992	35	2,143	415	255	35	2,302	56.2	88.60
1993	35	2,294	425	258	35	2,461	59.4	90.56
1994	35	2,361	471	261	35	2,571	61.4	92.32
1995	35	2,443	482	264	35	2,661	62.9	94.13
1996	35	2,534	482	268	35	2,748	64.4	95.71

Source: Sparks Companies, Inc.

Appendix A10 **CANADA BROILER TRADE ANALYSIS-CATTLE INDUSTRY IMPLICATIONS**

YEAR	CANADA BROILER PRICE-RESTRICTED TRADE	CANADA BROILER PRICE EQUALS US PRICE	TORONTO STEER PRICE-RESTRICTED TRADE	TORONTO STEER PRICE-BROILER PRICE EQUALS US PRICE	CANADA SLAUGHTER CATTLE EXPORTS-RESTRICTED TRADE	CANADA SLAUGHTER CATTLE EXPORTS-BROILER PRICE EQUALS US PRICE	CANADA CATTLE SLAUGHTER - RESTRICTED TRADE	CANADA CATTLE SLAUGHTER-BROILER PRICE EQUALS US PRICE
	C CENTS/KG	C CENTS/KG	CAN$/CWT	CAN$/CWT	000 HEAD	000 HEAD	000 HEAD	000 HEAD
1985	109.00		81.63		335		3603	
1986	110.00		82.62		221		3530	
1987	105.00		88.89		234		3263	
1988	113.00		87.35		465		3157	
1989	124.00		88.82		456		3197	
1990	122.62		88.89		845		2953	
1991	121.01	121.33	88.69	88.69	602	602	2889	2889
1992	124.50	98.43	88.60	83.12	459	684	3231	2975
1993	129.53	97.23	90.56	84.69	499	742	3434	3124
1994	134.48	97.34	92.32	85.91	392	679	3511	3210
1995	139.60	99.13	94.13	87.87	367	632	3590	3273
1996	144.71	101.48	95.71	89.71	249	485	3699	3376

Column #

1 Canada Broiler Price, Restricted Trade - Forecast of broiler prices based on existing supply management policies.

2 Canada Broiler Price Equals US Price - Forecast of broiler prices assuming that free trade between Canada and US to equivalent prices between the two countries.

3 Toronto Steer Price, Restricted Trade - Forecast of steer prices based on higher broiler prices supported by supply management policies.

4 Toronto Steer Price, Broiler Price Equals US Price - Forecast of steer prices based on competition from lower priced broilers due to additional broiler imports.

5 Slaughter Cattle Exports, Restricted Trade - Forecast of slaughter cattle exports based on higher prices for broilers and cattle prices due to broiler supply management policies.

6 Slaughter Cattle Exports, Broiler Price Equals US Price - Forecast of slaughter cattle exports based on lower broiler and cattle prices due to additional broiler imports.

7 Cattle Slaughter, Restricted Trade - Forecast of cattle slaughter based on existing supply management policies in broiler industry that provide support for higher broiler and beef cattle prices.

8 Cattle Slaughter, Broiler Price Equals US Price - Forecast of cattle slaughter based on lower cattle prices that are the result of higher broiler imports and lower broiler prices.

Appendix A11

CANADA BROILER TRADE ANALYSIS

YEAR	GEORGIA DOCK BROILER PRICE	GEORGIA TO CANADA TRANS-PORTA-TiON	US/CANADA DOLLAR EXCHANGE RATE	CANADA PRICE OF US BROILERS	ONTARIO LIVE BROILER PRICE CENTS/KG	ONTARIO DRESSED BROILER PRICE CENTS/LB	CANADA PRICE LESS US PRICE	CANADA BROILER IMPORTS-RESTRICTED TRADE	CANADA BROILER IMPORTS-US PRICE EQUALS CANADA PRICE	CANADA BROILER PRODUCTION -RESTRICTED TRADE	CANADA BROILER PRODUCTION-US PRICE EQUALS CANADA PRICE
	CENTS/LB	CENTS/ LB		CCENTS/ LB	CCENTS/ KG	CCENTS/ LB	CCENTS/LB	000 TONS	000 TONS	000 TONS	000 TONS
1985	47.81	4.00	1.366	70.75	109.00	68.67	-2.08	31		505	
1986	54.06	4.00	1.390	80.67	110.00	69.30	-11.37	30		488	
1987	45.00	4.00	1.326	64.97	105.00	66.15	1.18	36		531	
1988	53.12	4.00	1.231	70.30	113.00	71.19	0.89	41		537	
1989	55.81	4.00	1.184	70.82	124.00	78.12	7.30	39		539	
1990	51.25	4.00	1.167	64.47	122.62	77.25	12.78	45		565	
1991	48.91	4.00	1.150	60.85	121.01	76.24	15.39	38	38	598	598
1992	49.52	4.00	1.150	61.55	124.50	78.43	16.89	39	169	597	597
1993	49.49	4.00	1.150	61.51	129.53	81.60	20.09	39	229	595	568
1994	49.17	4.00	1.150	61.15	134.48	84.72	23.58	40	281	593	535
1995	49.17	4.00	1.150	61.15	139.60	87.95	26.80	40	329	592	501
1996	50.43	4.00	1.150	62.59	144.71	91.17	28.57	40	372	590	468

Column #	
1	Georgia Dock Broiler Price forecast
2	Cost of hauling Broilers from Georgia to Canada
3	US/Canada dollar exchange rate
4	Canada price of US Broilers, (Column 1 + Column 2) * Column 3
5	Ontario Price of Live Broilers forecast
6	Ontario Dressed Broiler Price, Column 5 / 2.2046 / .72 (Broiler Evisceration Yield)
7	Canada Price Less US Price, Column 6 - Column 4
8	Canada Broiler Imports, Restricted Trade - Broiler imports based on current supply management policies
9	Canada Broiler Imports, Canada Price Equals US Price - Broiler imports that would flow into Canada based on unrestricted trade. Imports would move to the level that would lead to equal prices in both countries after adjustment for transportation costs.
10	Canada Broiler Production, Restricted Trade - Broiler production forecast based on current supply management policies.
11	Canada Broiler Production, Canada Price Equals US Price - Broiler production levels based on the lower price for broilers, that is the result of addtional broiler imports that bring Canadian broiler prices to same level as US broiler prices.

APPENDIX B

BACKUP COST TABLES FOR COW-CALF BACKGROUNDING & FINISHING

Appendix B1: Grain Backgrounding – With Variable Feeding Period & Weight

ASSUMPTIONS	UNITS	Region 1 Fraser Vlly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Feeding Period	days	166	171	200	186	177	166	143	166
FOB Calf Weight	lbs	510	500	450	475	490	510	550	510
FOB Selling Weight	lbs	800	800	800	800	800	800	800	800
Purchase Price	$/cwt	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Shrink in	(%)	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Selling Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	72.00	114.94
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	18.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	15.00
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Corn, Barley Silage	lbs/day	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Wheat Scrn, Potato Waste	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROSS INCOME	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Less: Death loss	$	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Shrink	$	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Check-off	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing & Trucking	$	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
GROSS INCOME – MARKETING	$	680.50	680.50	680.50	680.50	680.50	680.50	680.50	680.50
COST OF FEEDER CALF									
Feeder Purchase Cost	$	510.00	500.00	450.00	475.00	490.00	510.00	550.00	510.00
Shrink in	$	10.20	5.00	4.50	4.75	4.90	5.10	5.50	5.10
Trucking to Feedlot	$	11.48	7.50	6.75	4.75	4.90	5.10	5.50	7.65
TOTAL FEEDER COST	$	531.68	512.50	461.25	484.50	499.80	520.20	561.00	522.75
MARKET MARGIN	$	148.82	168.00	219.25	196.00	180.70	160.30	119.50	157.75
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	37.65	38.30	38.56	33.75	26.49	25.60	23.35	47.70
Corn, Barley Silage	$	70.63	64.89	75.90	47.06	44.78	28.64	29.60	43.91
Wheat Scrn, Potato Waste	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FEED COST	$	108.28	103.19	114.46	80.81	71.28	54.24	52.95	91.61
POUNDS OF FEED PER DAY	lbs	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Feed Processing & Trucking	$	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	112.35	107.26	118.53	84.88	75.35	58.31	57.02	95.68
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	129.16	124.07	135.34	103.69	95.16	78.12	74.83	112.36
GROSS MARGIN	$	19.66	43.93	83.91	92.31	85.54	82.18	44.67	45.39
Yardage	$	28.22	29.07	34.00	31.62	30.09	28.22	24.31	28.22
Interest	$	25.40	25.20	27.10	25.51	24.76	23.74	21.94	18.17
INDIRECT COSTS	$	53.62	54.27	61.10	57.13	54.85	51.96	46.25	46.39
TOTAL PRODUCTION COSTS	$	182.78	178.34	196.43	160.82	150.01	130.07	121.08	158.75
TOTAL PROD & HNDLNG COST	$	223.96	210.34	227.18	189.82	179.31	159.77	151.58	191.00
PROFIT (LOSS)	$	(33.96)	(10.34)	22.82	35.18	30.69	30.23	(1.58)	(1.00)
PROD COST/CWT OF GAIN	$/cwt	63.03	59.45	56.12	49.48	48.39	44.85	48.43	54.74
TOTAL COST/CWT OF GAIN	$/cwt	77.23	70.11	64.91	58.40	57.84	55.09	60.63	65.86

Appendix B1-A: Grain Backgrounding, Variable Feeding Period & Weight, & $33/Ton Alberta Silage

ASSUMPTIONS	UNITS	Region 1 Fraser Vlly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Feeding Period	days	166	171	200	186	177	166	143	166
FOB Calf Weight	lbs	510	500	450	475	490	510	550	510
FOB Selling Weight	lbs	800	800	800	800	800	800	800	800
Purchase Price	$/cwt	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Shrink in	(%)	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Selling Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	72.00	114.94
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	33.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	15.00
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Corn, Barley Silage	lbs/day	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Wheat Scrn, Potato Waste	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROSS INCOME	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Less: Death loss	$	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Shrink	$	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Check-off	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing & Trucking	$	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
GROSS INCOME - MARKETING	$	680.50	680.50	680.50	680.50	680.50	680.50	680.50	680.50
COST OF FEEDER CALF									
Feeder Purchase Cost	$	510.00	500.00	450.00	475.00	490.00	510.00	550.00	510.00
Shrink in	$	10.20	5.00	4.50	4.75	4.90	5.10	5.50	5.10
Trucking to Feedlot	$	11.48	7.50	6.75	4.75	4.90	5.10	5.50	7.65
TOTAL FEEDER COST	$	531.68	512.50	461.25	484.50	499.80	520.20	561.00	522.75
MARKET MARGIN	$	148.82	168.00	219.25	196.00	180.70	160.30	119.50	157.75
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	37.65	38.30	38.56	33.75	26.49	25.60	23.35	47.70
Corn, Barley Silage	$	70.63	64.89	75.90	47.06	44.78	28.64	54.27	43.91
Wheat Scrn, Potato Waste	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FEED COST	$	108.28	103.19	114.46	80.81	71.28	54.24	77.62	91.61
POUNDS OF FEED PER DAY	lbs	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Feed Processing & Trucking	$	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	112.35	107.26	118.53	84.88	75.35	58.31	81.69	95.68
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	129.16	124.07	135.34	103.69	95.16	78.12	99.50	112.36
GROSS MARGIN	$	19.66	43.93	83.91	92.31	85.54	82.18	20.00	45.39
Yardage	$	28.22	29.07	34.00	31.62	30.09	28.22	24.31	28.22
Interest	$	25.40	25.20	27.10	25.51	24.76	23.74	22.40	18.17
INDIRECT COSTS	$	53.62	54.27	61.10	57.13	54.85	51.96	46.71	46.39
TOTAL PRODUCTION COSTS	$	182.78	178.34	196.43	160.82	150.01	130.07	146.21	158.75
TOTAL PROD & HNDLNG COST	$	223.96	210.34	227.18	189.82	179.31	159.77	176.71	191.00
PROFIT (LOSS)	$	(33.96)	(10.34)	22.82	35.18	30.69	30.23	(26.71)	(1.00)
PROD COST/CWT OF GAIN	$/cwt	63.03	59.45	56.12	49.48	48.39	44.85	58.48	54.74
TOTAL COST/CWT OF GAIN	$/cwt	77.23	70.11	64.91	58.40	57.84	55.09	70.68	65.86

Appendix B2: Grain Backgrounding – Equal Feeding Period & Weight

ASSUMPTIONS	UNITS	Region 1 Fraser Vlly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Feeding Period	days	171	171	171	171	171	171	171	171
FOB Calf Weight	lbs	500	500	500	500	500	500	500	500
FOB Selling Weight	lbs	800	800	800	800	800	800	800	800
Purchase Price	$/cwt	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Shrink in	(%)	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Selling Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	72.00	114.94
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	18.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	15.00
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Corn, Barley Silage	lbs/day	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Wheat Scrn, Potato Waste	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROSS INCOME	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Less: Death loss	$	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Shrink	$	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Check-off	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing & Trucking	$	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
GROSS INCOME - MARKETING	$	680.50	680.50	680.50	680.50	680.50	680.50	680.50	680.50
COST OF FEEDER CALF									
Feeder Purchase Cost	$	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
Shrink in	$	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Trucking to Feedlot	$	11.25	7.50	7.50	5.00	5.00	5.00	5.00	7.50
TOTAL FEEDER COST	$	521.25	512.50	512.50	510.00	510.00	510.00	510.00	512.50
MARKET MARGIN	$	159.25	168.00	168.00	170.50	170.50	170.50	170.50	168.00
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	38.78	38.30	32.97	31.03	25.60	26.37	27.92	49.14
Corn, Barley Silage	$	72.76	64.89	64.89	43.26	43.26	29.50	35.40	45.23
Wheat Scrn, Potato Waste	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FEED COST	$	111.54	103.19	97.86	74.29	68.86	55.87	63.32	94.37
POUNDS OF FEED PER DAY	lbs	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Feed Processing & Trucking	$	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	115.61	107.26	101.93	78.36	72.93	59.94	67.39	98.44
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	132.42	124.07	118.74	97.17	92.74	79.75	85.20	115.12
GROSS MARGIN	$	26.83	43.93	49.26	73.33	77.76	90.75	85.30	52.88
Yardage	$	29.07	29.07	29.07	29.07	29.07	29.07	29.07	29.07
Interest	$	25.77	25.20	25.08	24.44	24.32	24.03	24.20	18.42
INDIRECT COSTS	$	54.84	54.27	54.15	53.51	53.39	53.10	53.27	47.49
TOTAL PRODUCTION COSTS	$	187.27	178.34	172.89	150.68	146.13	132.85	138.47	162.61
TOTAL PROD & HNDLNG COST	$	228.02	210.34	204.89	180.18	175.63	162.35	167.97	194.61
PROFIT (LOSS)	$	(28.02)	(10.34)	(4.89)	19.82	24.37	37.65	32.03	5.39
PROD COST/CWT OF GAIN	$/cwt	62.42	59.45	57.63	50.23	48.71	44.28	46.16	54.20
TOTAL COST/CWT OF GAIN	$/cwt	76.01	70.11	68.30	60.06	58.54	54.12	55.99	64.87

Appendix B2-A: Grain Backgrounding, Equal Feeding Period & Weight, & $33/Ton Alberta Silage

ASSUMPTIONS	UNITS	Region 1 Fraser Vly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Feeding Period	days	171	171	171	171	171	171	171	171
FOB Calf Weight	lbs	500	500	500	500	500	500	500	500
FOB Selling Weight	lbs	800	800	800	800	800	800	800	800
Purchase Price	$/cwt	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Shrink in	(%)	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Selling Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	72.00	114.94
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	33.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	15.00
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Corn, Barley Silage	lbs/day	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00
Wheat Scrn, Potato Waste	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GROSS INCOME	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Less: Death loss	$	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Shrink	$	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
Check-off	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing & Trucking	$	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
GROSS INCOME - MARKETING	$	680.50	680.50	680.50	680.50	680.50	680.50	680.50	680.50
COST OF FEEDER CALF									
Feeder Purchase Cost	$	500.00	500.00	500.00	500.00	500.00	500.00	500.00	500.00
Shrink in	$	10.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Trucking to Feedlot	$	11.25	7.50	7.50	5.00	5.00	5.00	5.00	7.50
TOTAL FEEDER COST	$	521.25	512.50	512.50	510.00	510.00	510.00	510.00	512.50
MARKET MARGIN	$	159.25	168.00	168.00	170.50	170.50	170.50	170.50	168.00
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	38.78	38.30	32.97	31.03	25.60	26.37	27.92	49.14
Corn, Barley Silage	$	72.76	64.89	64.89	43.26	43.26	29.50	64.89	45.23
Wheat Scrn, Potato Waste	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FEED COST	$	111.54	103.19	97.86	74.29	68.86	55.87	92.82	94.37
POUNDS OF FEED PER DAY	lbs	28.0	28.0	28.0	28.0	28.0	28.0	28.0	28.0
Feed Processing & Trucking	$	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	115.61	107.26	101.93	78.36	72.93	59.94	96.89	98.44
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	132.42	124.07	118.74	97.17	92.74	79.75	114.70	115.12
GROSS MARGIN	$	26.83	43.93	49.26	73.33	77.76	90.75	55.80	52.88
Yardage	$	29.07	29.07	29.07	29.07	29.07	29.07	29.07	29.07
Interest	$	25.77	25.20	25.08	24.44	24.32	24.03	24.85	18.42
INDIRECT COSTS	$	54.84	54.27	54.15	53.51	53.39	53.10	53.92	47.49
TOTAL PRODUCTION COSTS	$	187.27	178.34	172.89	150.68	146.13	132.85	168.62	162.61
TOTAL PROD & HNDLNG COST	$	228.02	210.34	204.89	180.18	175.63	162.35	198.12	194.61
PROFIT (LOSS)	$	(28.02)	(10.34)	(4.89)	19.82	24.37	37.65	1.88	5.39
PROD COST/CWT OF GAIN	$/cwt	62.42	59.45	57.63	50.23	48.71	44.28	56.21	54.20
TOTAL COST/CWT OF GAIN	$/cwt	76.01	70.11	68.30	60.06	58.54	54.12	66.04	64.87

Appendix B3: Grass Backgrounding – With Variable Feeding Period & Weight

ASSUMPTIONS	UNITS	Region 1 Fraser Vly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Feeding Period	days	150	150	150	120	100	100	120	150
Calf Weight	lbs	637	637	637	690	725	725	690	637
Selling Weight	lbs	900	900	900	900	900	900	900	900
Purchase Price	$/cwt	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
Shrink in	(%)	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Selling Price	$/cwt	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Handling Shrink	(%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Feed Cost									
Forage Hay	AUM	17.00	12.00	13.00	11.00	12.00	8.00	12.00	15.00
Hay	lbs/day	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
GROSS INCOME	$	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00
Less: Death loss	$	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
Shrink	$	14.40	14.40	14.40	14.40	14.40	14.40	14.40	14.40
Check-off	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing & Trucking	$	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
GROSS INCOME - MARKETING	$	699.75	699.75	699.75	699.75	699.75	699.75	699.75	700.00
COST OF CALF									
Calf Purchase Cost	$	573.30	573.30	573.30	621.00	652.50	652.50	621.00	573.30
Shrink in	$	11.47	5.73	5.73	6.21	6.53	6.53	6.21	5.73
Trucking to Grass	$	14.33	9.56	9.56	6.90	7.25	7.25	6.90	9.56
TOTAL FEEDER COST	$	599.10	588.59	588.59	634.11	666.28	666.28	634.11	588.59
MARKET MARGIN	$	100.65	111.16	111.16	65.64	33.48	33.48	65.64	111.41
FEED COST (Hay)	$	85.00	60.00	65.00	44.00	40.00	26.67	48.00	75.00
POUNDS OF FEED PER DAY	lbs	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Feed Processing & Trucking	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	86.07	61.07	66.07	45.07	41.07	27.74	49.07	76.07
Bedding	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vet & Medicine	$	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DIRECT COSTS	$	91.07	66.07	71.07	50.07	46.07	32.74	54.07	81.07
GROSS MARGIN	$	9.58	45.09	40.09	15.57	(12.59)	0.74	11.57	30.34
Yardage	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest	$	25.07	24.17	24.27	20.51	17.88	17.70	20.57	18.03
INDIRECT COSTS	$	25.07	24.17	24.27	20.51	17.88	17.70	20.57	18.03
TOTAL PRODUCTION COSTS	$	116.14	90.24	95.34	70.58	63.95	50.44	74.64	99.10
TOTAL PROD & HNDLNG COST	$	162.19	125.78	130.88	103.94	97.97	84.46	108.00	134.63
PROFIT (LOSS) / HEAD	$	(15.49)	20.92	15.82	(4.94)	(30.47)	(16.96)	(9.00)	12.32
PROD COST/CWT OF GAIN	$/cwt	44.16	34.31	36.25	33.61	36.54	28.82	35.54	37.68
TOTAL COST/CWT OF GAIN	$/cwt	61.67	47.82	49.76	49.49	55.98	48.27	51.43	51.19

Appendix B4: Grass Backgrounding – With Equal Feeding Period & Weight

ASSUMPTIONS	UNITS	Region 1 Fraser Vlly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Feeding Period	days	120	120	120	120	120	120	120	120
Calf Weight	lbs	690	690	690	690	690	690	690	690
Selling Weight	lbs	900	900	900	900	900	900	900	900
Purchase Price	$/cwt	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
Shrink in	(%)	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Selling Price	$/cwt	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Handling Shrink	(%)	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Feed Cost									
Forage Hay	AUM	17.00	12.00	13.00	11.00	12.00	8.00	12.00	15.00
Hay	lbs/day	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
GROSS INCOME	$	720.00	720.00	720.00	720.00	720.00	720.00	720.00	720.00
Less: Death loss	$	3.60	3.60	3.60	3.60	3.60	3.60	3.60	3.60
Shrink	$	14.40	14.40	14.40	14.40	14.40	14.40	14.40	14.40
Check-off	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Marketing & Trucking	$	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
GROSS INCOME - MARKETING	$	699.75	699.75	699.75	699.75	699.75	699.75	699.75	699.75
COST OF CALF									
Calf Purchase Cost	$	621.00	621.00	621.00	621.00	621.00	621.00	621.00	621.00
Shrink in	$	12.42	6.21	6.21	6.21	6.21	6.21	6.21	6.21
Trucking to Grass	$	15.53	10.35	10.35	6.90	6.90	6.90	6.90	10.35
TOTAL FEEDER COST	$	648.95	637.56	637.56	634.11	634.11	634.11	634.11	637.56
MARKET MARGIN	$	50.80	62.19	62.19	65.64	65.64	65.64	65.64	62.19
FEED COST (Hay)	$	68.00	48.00	52.00	44.00	48.00	32.00	48.00	60.00
POUNDS OF FEED PER DAY	lbs	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Feed Processing & Trucking	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	69.07	49.07	53.07	45.07	49.07	33.07	49.07	61.07
Bedding	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Vet & Medicine	$	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
DIRECT COSTS	$	74.07	54.07	58.07	50.07	54.07	38.07	54.07	66.07
GROSS MARGIN	$	(23.27)	8.12	4.12	15.57	11.57	27.57	11.57	(3.88)
Yardage	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest	$	21.35	20.68	20.74	20.51	20.57	20.32	20.57	15.38
INDIRECT COSTS	$	21.35	20.68	20.74	20.51	20.57	20.32	20.57	15.38
TOTAL PRODUCTION COSTS	$	95.42	74.75	78.81	70.58	74.64	58.39	74.64	81.45
TOTAL PROD & HNDLNG COST	$	143.61	111.56	115.62	103.94	108.00	91.75	108.00	118.26
PROFIT (LOSS) / HEAD	$	(44.61)	(12.56)	(16.62)	(4.94)	(9.00)	7.25	(9.00)	(19.26)
PROD COST/CWT OF GAIN	$/cwt	45.44	35.59	37.53	33.61	35.54	27.81	35.54	38.78
TOTAL COST/CWT OF GAIN	$/cwt	68.39	53.12	55.06	49.49	51.43	43.69	51.43	56.31

Appendix B5: Beef Feedlot Finishing

ASSUMPTIONS	UNITS	Region 1 Fraser Vly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Feeding Period	days	94	94	94	94	94	94	94	94
FOB Calf Weight	lbs	800	800	800	800	800	800	800	800
FOB Selling Weight	lbs	1129	1129	1129	1129	1129	1129	1129	1129
Purchase Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Shrink in	(%)	2.00%	1.00%	1.50%	1.00%	1.00%	1.50%	1.00%	2.00%
Selling Price	$/cwt	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	5.00%	6.50%	6.50%	6.50%	6.50%	6.50%	5.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	80.00	119.54
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	18.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	10.34
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	14.00	18.00	18.00	18.00	18.00	20.00	20.00	13.00
Corn, Barley Silage	lbs/day	8.40	12.00	12.00	12.00	12.00	8.00	8.00	0.00
Wheat Scrn, Potato Waste	lbs/day	5.60	0.00	0.00	0.00	0.00	0.00	0.00	15.00
GROSS INCOME	$	863.69	863.69	863.69	863.69	863.69	863.69	863.69	863.69
Less: Death loss	$	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32
Shrink	$	43.18	56.14	56.14	56.14	56.14	56.14	43.18	17.27
Check-off	$	2.75	2.75	2.75	2.75	2.75	2.75	0.20	0.00
Marketing & Trucking	$	2.82	22.58	22.58	25.40	31.05	23.71	11.29	5.65
GROSS INCOME - MARKETING	$	810.61	777.90	777.90	775.07	769.43	776.77	804.69	836.45
COST OF FEEDER CALF									
Feeder Purchase Cost	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Shrink in	$	14.00	7.00	10.50	7.00	7.00	10.50	7.00	14.00
Trucking to Feedlot	$	16.00	4.00	6.00	4.00	4.00	16.00	8.00	16.00
TOTAL FEEDER COST	$	730.00	711.00	716.50	711.00	711.00	726.50	715.00	730.00
MARKET MARGIN	$	80.61	66.90	61.40	64.07	58.43	50.27	89.69	106.45
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	59.69	75.79	65.24	61.40	50.65	57.99	68.22	73.04
Corn, Barley Silage	$	14.61	18.61	18.61	12.41	12.41	5.64	6.77	0.00
Wheat Scrn, Potato Waste	$	20.53	0.00	0.00	0.00	0.00	0.00	0.00	7.29
FEED COST	$	94.84	94.40	83.85	73.81	63.06	63.63	74.99	80.33
POUNDS OF FEED PER DAY	lbs	28.0	30.0	30.0	30.0	30.0	28.0	28.0	28.0
Feed Processing & Trucking	$	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	109.56	109.12	98.57	88.53	77.78	78.35	89.71	95.05
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	126.37	125.93	115.38	107.34	97.59	98.16	107.52	111.74
GROSS MARGIN	$	(45.76)	(59.03)	(53.98)	(43.26)	(39.16)	(47.89)	(17.83)	(5.29)
Yardage	$	15.98	15.98	15.98	15.98	15.98	15.98	15.98	15.98
Interest	$	19.20	18.73	18.74	18.48	18.35	18.73	18.59	14.02
INDIRECT COSTS	$	35.18	34.71	34.72	34.46	34.33	34.71	34.57	30.00
TOTAL PRODUCTION COSTS	$	161.55	160.64	150.09	141.79	131.92	132.87	142.09	141.73
TOTAL PROD & HNDLNG COST	$	244.62	257.43	252.38	241.41	237.17	246.29	216.08	198.97
PROFIT (LOSS)	$	(80.94)	(93.74)	(88.70)	(77.72)	(73.49)	(82.60)	(52.40)	(35.28)
PROD COST/CWT OF GAIN	$/cwt	49.10	48.83	45.62	43.10	40.10	40.39	43.19	43.08
TOTAL COST/CWT OF GAIN	$/cwt	74.35	78.25	76.71	73.38	72.09	74.86	65.68	60.48

Appendix B5–A: Beef Feedlot Finishing, Assuming $33/Ton Alberta Silage

ASSUMPTIONS	UNITS	Region 1 Fraser Vlly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
Feeding Period	days	94	94	94	94	94	94	94	94
FOB Calf Weight	lbs	800	800	800	800	800	800	800	800
FOB Selling Weight	lbs	1129	1129	1129	1129	1129	1129	1129	1129
Purchase Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Shrink in	(%)	2.00%	1.00%	1.50%	1.00%	1.00%	1.50%	1.00%	2.00%
Selling Price	$/cwt	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	5.00%	6.50%	6.50%	6.50%	6.50%	6.50%	5.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	80.00	119.54
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	33.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	10.34
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	14.00	18.00	18.00	18.00	18.00	20.00	20.00	13.00
Corn, Barley Silage	lbs/day	8.40	12.00	12.00	12.00	12.00	8.00	8.00	0.00
Wheat Scrn, Potato Waste	lbs/day	5.60	0.00	0.00	0.00	0.00	0.00	0.00	15.00
GROSS INCOME	$	863.69	863.69	863.69	863.69	863.69	863.69	863.69	863.69
Less: Death loss	$	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32
Shrink	$	43.18	56.14	56.14	56.14	56.14	56.14	43.18	17.27
Check–off	$	2.75	2.75	2.75	2.75	2.75	2.75	0.20	0.00
Marketing & Trucking	$	2.82	22.58	22.58	25.40	31.05	23.71	11.29	5.65
GROSS INCOME – MARKETING	$	810.61	777.90	777.90	775.07	769.43	776.77	804.69	836.45
COST OF FEEDER CALF									
Feeder Purchase Cost	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Shrink in	$	14.00	7.00	10.50	7.00	7.00	10.50	7.00	14.00
Trucking to Feedlot	$	16.00	4.00	6.00	4.00	4.00	16.00	8.00	16.00
TOTAL FEEDER COST	$	730.00	711.00	716.50	711.00	711.00	726.50	715.00	730.00
MARKET MARGIN	$	80 61	66.90	61.40	64.07	58.43	50.27	89.69	106.45
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	59.69	75.79	65.24	61.40	50.65	57.99	68.22	73.04
Corn, Barley Silage	$	14.61	18.61	18.61	12.41	12.41	5.64	12.41	0.00
Wheat Scrn, Potato Waste	$	20.53	0.00	0.00	0.00	0.00	0.00	0.00	7.29
FEED COST	$	94.84	94.40	83.85	73.81	63.06	63.63	80.63	80.33
POUNDS OF FEED PER DAY	lbs	28.0	30.0	30.0	30.0	30.0	28.0	28.0	28.0
Feed Processing & Trucking	$	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	109.56	109.12	98.57	88.53	77.78	78.35	95.35	95.05
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	126.37	125.93	115.38	107.34	97.59	98.16	113.16	111.74
GROSS MARGIN	$	(45.76)	(59.03)	(53.98)	(43.26)	(39.16)	(47.89)	(23.47)	(5.29)
Yardage	$	15.98	15.98	15.98	15.98	15.98	15.98	15.98	15.98
Interest	$	19.20	18.73	18.74	18.48	18.35	18.73	18.66	14.02
INDIRECT COSTS	$	35.18	34.71	34.72	34.46	34.33	34.71	34.64	30.00
TOTAL PRODUCTION COSTS	$	161.55	160.64	150.09	141.79	131.92	132.87	147.80	141.73
TOTAL PROD & HNDLNG COST	$	244.62	257.43	252.38	241.41	237.17	246.29	221.79	198.97
PROFIT (LOSS)	$	(80.94)	(93.74)	(88.70)	(77.72)	(73.49)	(82.60)	(58.11)	(35.28)
PROD COST/CWT OF GAIN	$/cwt	49.10	48.83	45.62	43.10	40.10	40.39	44.92	43.08
TOTAL COST/CWT OF GAIN	$/cwt	74.35	78.25	76.71	73.38	72.09	74.86	67.41	60.48

Appendix B5–B: Beef Feedlot Finishing, Different Rate of Gain & $33/Ton Alberta Silage

ASSUMPTIONS	UNITS	Region 1 Fraser Vly	Region 2 S. Int.	Region 3 Kootenay	Region 4 Cariboo	Region 5 Bulkley	Region 6 Peace	Alberta	PNW (CAN$)
Average Daily Gain	lbs/day	· 3.74	3.74	3.74	3.50	3.50	3.50	3.50	3.50
Feeding Period	days	88	88	88	94	94	94	94	94
FOB Calf Weight	lbs	800	800	800	800	800	800	800	800
FOB Selling Weight	lbs	1129	1129	1129	1129	1129	1129	1129	1129
Purchase Price	$/cwt	87.50	87.50	87.50	87.50	87.50	87.50	87.50	87.50
Shrink in	(%)	2.00%	1.00%	1.50%	1.00%	1.00%	1.50%	1.00%	2.00%
Selling Price	$/cwt	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50
Death Loss	(%)	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Interest Rate	(%)	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	9.50%	7.00%
Yardage	$/hd/day	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
Mkt Shrink, 4%+transportation	(%)	5.00%	6.50%	6.50%	6.50%	6.50%	6.50%	5.00%	2.00%
Feed Cost Per Ton(ne)									
Hay	$/Ton	158.00	98.33	70.00	80.00	60.00	50.00	70.00	74.71
Barley (net FFA)	$/Tonne	100.00	98.75	85.00	80.00	66.00	68.00	80.00	119.54
Corn, Barley Silage	$/Ton	37.00	33.00	33.00	22.00	22.00	15.00	33.00	23.00
Wheat Scrn, Potato Waste	$/Tonne	86.00	n/a	n/a	n/a	n/a	n/a	n/a	10.34
Hay	lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	lbs/day	14.00	18.00	18.00	18.00	18.00	20.00	20.00	13.00
Corn, Barley Silage	lbs/day	8.40	12.00	12.00	12.00	12.00	8.00	8.00	0.00
Wheat Scrn, Potato Waste	lbs/day	5.60	0.00	0.00	0.00	0.00	0.00	0.00	15.00
GROSS INCOME	$	863.69	863.69	863.69	863.69	863.69	863.69	863.69	863.69
Less: Death loss	$	4.32	4.32	4.32	4.32	4.32	4.32	4.32	4.32
Shrink	$	43.18	56.14	56.14	56.14	56.14	56.14	43.18	17.27
Check-off	$	2.75	2.75	2.75	2.75	2.75	2.75	0.20	0.00
Marketing & Trucking	$	2.82	22.58	22.58	25.40	31.05	23.71	11.29	5.65
GROSS INCOME - MARKETING	$	810.61	777.90	777.90	775.07	769.43	776.77	804.69	836.45
COST OF FEEDER CALF									
Feeder Purchase Cost	$	700.00	700.00	700.00	700.00	700.00	700.00	700.00	700.00
Shrink in	$	14.00	7.00	10.50	7.00	7.00	10.50	7.00	14.00
Trucking to Feedlot	$	16.00	4.00	6.00	4.00	4.00	16.00	8.00	16.00
TOTAL FEEDER COST	$	730.00	711.00	716.50	711.00	711.00	726.50	715.00	730.00
MARKET MARGIN	$	80.61	66.90	61.40	64.07	58.43	50.27	89.69	106.45
FEEDING COST									
Hay	$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Barley	$	55.88	70.95	61.07	61.40	50.65	57.99	68.22	73.04
Corn, Barley Silage	$	13.68	17.42	17.42	12.41	12.41	5.64	12.41	0.00
Wheat Scrn, Potato Waste	$	19.22	0.00	0.00	0.00	0.00	0.00	0.00	7.29
FEED COST	$	88.78	88.38	78.50	73.81	63.06	63.63	80.63	80.33
POUNDS OF FEED PER DAY	lbs	28.0	30.0	30.0	30.0	30.0	28.0	28.0	28.0
Feed Processing & Trucking	$	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
Mineral	$	1.07	1.07	1.07	1.07	1.07	1.07	1.07	1.07
TOTAL FEED COSTS	$	103.50	103.10	93.22	88.53	77.78	78.35	95.35	95.05
Bedding	$	3.00	3.00	3.00	5.00	6.00	6.00	4.00	2.87
Vet & Medicine	$	13.81	13.81	13.81	13.81	13.81	13.81	13.81	13.81
DIRECT COSTS	$	120.31	119.91	110.03	107.34	97.59	98.16	113.16	111.74
GROSS MARGIN	$	(39.70)	(53.01)	(48.63)	(43.26)	(39.16)	(47.89)	(23.47)	(5.29)
Yardage	$	14.96	14.96	14.96	15.98	15.98	15.98	15.98	15.98
Interest	$	17.91	17.47	17.48	18.48	18.35	18.73	18.66	14.02
INDIRECT COSTS	$	32.87	32.43	32.44	34.46	34.33	34.71	34.64	30.00
TOTAL PRODUCTION COSTS	$	153.18	152.33	142.46	141.79	131.92	132.87	147.80	141.73
TOTAL PROD & HNDLNG COST	$	236.25	249.12	244.75	241.41	237.17	246.29	221.79	198.97
PROFIT (LOSS)	$	(72.57)	(85.43)	(81.07)	(77.72)	(73.49)	(82.60)	(58.11)	(35.28)
PROD COST/CWT OF GAIN	$/cwt	46.56	46.30	43.30	43.10	40.10	40.39	44.92	43.08
TOTAL COST/CWT OF GAIN	$/cwt	71.81	75.72	74.39	73.38	72.09	74.86	67.41	60.48

Appendix B6: Forage Costs As Related to Feeding Periods and Local Market Values

Category	Units	Alberta	S. Interior 2	Kootenay 3	Cariboo 4	Bulkley 5	Peace 6
Feeding Period	days	220	130	180	190	200	220
Farm Grown Feed*	$/Cow	$150	$215	$194	$218	$156	$193
Production Cost of Hay	$/Short Ton	$62	$150	$98	$104	$116	$80
Market Price of Hay	$/Short Ton	$48	$80	$80	$80	$60	$50

* Assume 22 lb. Hay/Day as Ration

Note: Fraser Valley is not include due to a negligible forage feeding.
Source: 1989-90 Cow/Calf enterprise analyses of BCAFF and ADA.

APPENDIX C

BACKUP DATA FOR

FIGURE IV-1

Appendix C1: Feeder Prices and NTS Feeder & Slaughter Payouts

Mnth/Yr	Price of 6-700 lb. Steers Edmonton	Price of 800 lb. + Steers Edmonton	Slaughter Payout Per Head	Feeder Payout Per Head
Jan 1986	$83.29	$79.22	$0.00	$0.00
Feb 1986	$84.06	$79.83	$0.00	$0.00
Mar 1986	$84.07	$77.52	$0.00	$0.00
Apr 1986	$82.47	$75.28	$4.40	$0.00
May 1986	$85.73	$77.20	$4.40	$0.00
Jun 1986	$87.22	$77.75	$4.40	$0.00
Jul 1986	$86.16	$79.92	$0.00	$0.00
Aug 1986	$93.13	$83.63	$0.00	$0.00
Sep 1986	$96.49	$85.25	$0.00	$0.00
Oct 1986	$96.48	$85.03	$0.00	$0.00
Nov 1986	$93.62	$86.70	$0.00	$0.00
Dec 1986	$92.52	$83.77	$0.00	$0.00
Jan 1987	$97.16	$86.91	$0.00	$0.00
Feb 1987	$101.05	$87.76	$0.00	$0.00
Mar 1987	$100.46	$87.17	$0.00	$0.00
Apr 1987	$105.38	$91.06	$0.00	$0.00
May 1987	$108.60	$94.85	$0.00	$0.00
Jun 1987	$108.22	$95.39	$0.00	$0.00
Jul 1987	$107.56	$96.90	$0.00	$0.00
Aug 1987	$110.35	$98.27	$0.00	$0.00
Sep 1987	$115.82	$98.81	$0.00	$0.00
Oct 1987	$110.16	$94.77	$5.79	$0.00
Nov 1987	$105.84	$88.21	$5.79	$0.00
Dec 1987	$109.48	$92.97	$5.79	$0.00
Jan 1988	$109.44	$92.60	$12.64	$0.00
Feb 1988	$109.86	$99.14	$12.64	$0.00
Mar 1988	$110.00	$93.26	$12.64	$0.00
Apr 1988	$109.79	$91.33	$14.08	$0.00
May 1988	$101.67	$92.24	$14.08	$0.00
Jun 1988	$103.74	$90.87	$14.08	$0.00
Jul 1988	$102.62	$88.54	$33.65	$10.93
Aug 1988	$102.04	$87.87	$33.65	$10.93
Sep 1988	$101.03	$89.23	$33.65	$10.93
Oct 1988	$98.10	$88.86	$29.31	$12.85
Nov 1988	$100.50	$90.86	$29.31	$12.85
Dec 1988	$100.00	$91.76	$29.31	$12.85

Assumptions:

1. From 1986 to 1988 calculations were done on a quarterly basis. However, payouts, when triggered within this period, where devided by three and put into each month of the quarter for this model.

Notes:

* Prices are to-date averages (not full month's worth).

** Predicted as of November 1991 by Alberta Agriculture

Appendix C1: Feeder Prices and NTS Feeder & Slaughter Payouts

Mnth/Yr	Price of 6-700 lb. Steers Edmonton	Price of 800 lb. + Steers Edmonton	Slaughter Payout Per Head	Feeder Payout Per Head
Jan 1989	$100.29	$93.50	$17.09	$0.00
Feb 1989	$96.02	$91.06	$3.02	$0.00
Mar 1989	$95.24	$89.76	$0.00	$3.96
Apr 1989	$93.50	$85.50	$44.50	$16.62
May 1989	$97.65	$85.57	$59.83	$23.68
Jun 1989	$101.32	$88.50	$68.58	$9.32
Jul 1989	$98.51	$91.04	$49.30	$0.00
Aug 1989	$95.29	$92.10	$10.28	$0.00
Sep 1989	$98.60	$89.15	$17.35	$1.65
Oct 1989	$99.32	$90.91	$12.93	$0.00
Nov 1989	$95.61	$90.68	$29.21	$0.00
Dec 1989	$94.94	$90.16	$5.18	$0.00
Jan 1990	$93.54	$90.27	$0.00	$0.00
Feb 1990	$94.13	$89.30	$0.00	$0.00
Mar 1990	$91.90	$86.06	$11.96	$11.45
Apr 1990	$94.81	$87.55	$0.00	$0.00
May 1990	$98.85	$90.00	$10.23	$0.00
Jun 1990	$104.67	$96.21	$0.00	$0.00
Jul 1990	$101.47	$94.28	$0.00	$0.00
Aug 1990	$100.20	$94.32	$0.00	$0.00
Sep 1990	$100.58	$93.10	$0.00	$0.00
Oct 1990	$100.54	$94.91	$0.00	$0.00
Nov 1990	$99.93	$96.05	$0.00	$0.00
Dec 1990	$97.66	$91.42	$0.00	$0.00
Jan 1991	$99.57	$93.09	$0.00	$0.00
Feb 1991	$104.20	$93.85	$0.00	$0.00
Mar 1991	$105.05	$94.95	$0.00	$0.00
Apr 1991	$107.23	$94.84	$0.00	$0.00
May 1991	$111.02	$97.43	$0.00	$0.00
Jun 1991	$111.38	$98.28	$0.00	$0.00
Jul 1991	$106.28	$98.23	$33.68	$0.00
Aug 1991	$103.59	$95.23	$98.09	$0.00
Sep 1991	$106.48	$95.67	$131.06	$0.00
Oct 1991	$102.39	$92.67	$170.00 **	
Nov 1991	$99.42 *	$87.67 *	$160.00 **	
Dec 1991			$90.00 **	

Assumptions:

1. From 1986 to 1988 calculations were done on a quarterly basis. However, payouts, when triggered within this period, where devided by three and put into each month of the quarter for this model.

Notes:

* Prices are to-date averages (not full month's worth).

** Predicted as of November 1991 by Alberta Agriculture

APPENDIX D

FINANCIAL PROGRAMS

STUDY ADVISORY COMMITTEE MEMBERS

APPENDIX
FINANCIAL PROGRAMS
STUDY ADVISORY COMMITTEE MEMBERS

LAST NAME	FIRST NAME	TOWN
Dangle	Frank	Grindrod
Freding	Bill	Oliver
Fung	Dennis	Surrey
Merz	Dave	Fort Fraser
McConnell	Mike	Dawson Creek
Priest	Deryl	Surrey
Falk	Gary	Victoria
Keay	Roger	Kamloops
Lohr	Wayne	Victoria
Cameron	Ken	Quesnel